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**Interagency  
Intelligence  
Memorandum**

**CIA HISTORICAL REVIEW PROGRAM  
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*Trends in Soviet Military Programs*

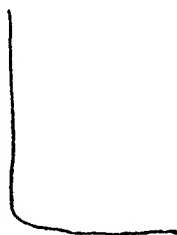
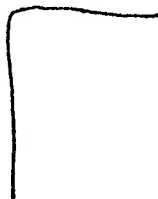
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## TRENDS IN SOVIET MILITARY PROGRAMS

### PREFACE<sup>1</sup>

This memorandum is designed to provide a broad overview of recent trends in the evolution of Soviet military forces, weapons systems, missions, and operations. It covers developments from the mid-1960s to the present, but it makes no attempt to project future developments.

To a large extent, this memorandum represents a summary of material presented in the most recent basic NIEs on Soviet forces. It focuses on those factors that are most critical to an understanding of Soviet military power as a whole, and it does not attempt to cover all aspects of force development. Readers are directed to the following national intelligence documents and the Defense Intelligence Projections for Planning (DIPP) series for more comprehensive coverage of specific areas:

NIE 11-3/8-75 "Soviet Forces for Intercontinental Conflict Through the Mid-1980s"

NIE 11-14-75 "Warsaw Pact Forces Opposite NATO"

<sup>1</sup>This memorandum was undertaken in response to a request by the Director, Defense Intelligence Agency. It was prepared by an ad hoc interagency working group under the guidance of the National Intelligence Officer (NIO) for Strategic Programs, the NIO for Conventional Forces, and the NIO for the USSR and East Europe. It was drafted by the Central Intelligence Agency and coordinated with representatives of the Defense Intelligence Agency, the National Security Agency, the Energy Research and Development Agency, and the intelligence organizations of the Departments of State, the Army, the Navy, and the Air Force.

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NIE 11-15-74 "Soviet Naval Policy and Programs"

NIE 11-10-76 (in preparation) "Soviet Military Policy in the Third World"

IIM (in preparation) "Soviet Civil Defense"

We have updated the data presented in existing estimates in some cases, but we have not attempted to redo all the analyses that went into their preparation. We believe that we have adequately reflected all major changes that have taken place since these estimates were issued, but there are some points where new developments have not yet been fully analyzed. Some of the basic estimates on Soviet forces are in the process of being revised, moreover, and this may result in judgments somewhat different from those presented here.

This memorandum is divided into four sections:

- Section I outlines overall trends in Soviet military programs, and presents our general assessments of the Soviets' achievements in the development of their forces.
- Section II summarizes the major trends in the development of the various branches of the Soviet armed forces, and Section III provides a similar treatment for various categories of weapons systems. There is some overlap in the material covered in these two sections, which are designed to provide different perspectives on the overall pattern of Soviet military development.
- Section IV describes the interaction of the individual components of the Soviet forces in the accomplishment of various peacetime and wartime missions, as the Soviets seem to perceive them.

This memorandum is focused on the Soviet military establishment and it does not discuss other Warsaw Pact forces in any detail. Developments in the East European forces were considered during the preparation of the paper, however, and are briefly noted in those instances where they have an important bearing on Soviet military policy and programs.

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## TRENDS IN SOVIET MILITARY PROGRAMS

### I. MAJOR TRENDS AND ACHIEVEMENTS

1. During the past decade there has been a substantial growth in overall Soviet military capabilities. There have been significant developments in all major components of the armed forces and in their command and control system. While there are still areas in which elements of the Soviet forces have serious deficiencies, there are others in which they are ahead of the US. The impressive developments of the past ten years signify the determination and persistence with which the Soviet leaders seek to meet the threats and exploit the opportunities they perceive.

#### A. Strategic Forces

2. The capabilities of Soviet strategic offensive forces have grown dramatically since the mid-1960s. The rapid growth in Soviet intercontinental and submarine-launched ballistic missile forces in the late 1960s and early 1970s effected a fundamental shift in the strategic balance. From an earlier position of clear inferiority, the Soviets have achieved a rough equivalence in strategic power when compared with US forces (see Figure 1). At the same time, they are pressing ahead with programs designed to improve the quality of the forces they possess. These programs include a fourth generation of ICBMs with multiple independently targeted reentry vehicles (MIRVs), greater throw-weight, better accuracy, and more survivable silos; construction of new ballistic missile submarines with longer-range missiles; development of a mobile ICBM and a new mobile intermediate range missile; and initial deployment of a new bomber. Additional new or modified ICBM and SLBM systems are under development, but have not yet reached the flight test stage.

3. The Soviets also have made vigorous and continuing efforts to improve their strategic defensive capabilities, but with much less success than in the case of offensive capabilities:

- They have deployed an anti-ballistic missile (ABM) system capable of defending Moscow against light attacks, and they have developed an antisatellite missile system with a non-nuclear intercept capability.
- They have maintained and improved their extensive air defense system.
- They have given considerable attention to ASW capabilities in their naval construction programs.
- They have developed an ambitious civil defense program under military control.
- They have mounted extensive R&D efforts related to directed-energy weapons and ASW sensors.

Despite these costly programs, Soviet strategic defenses still have critical deficiencies:

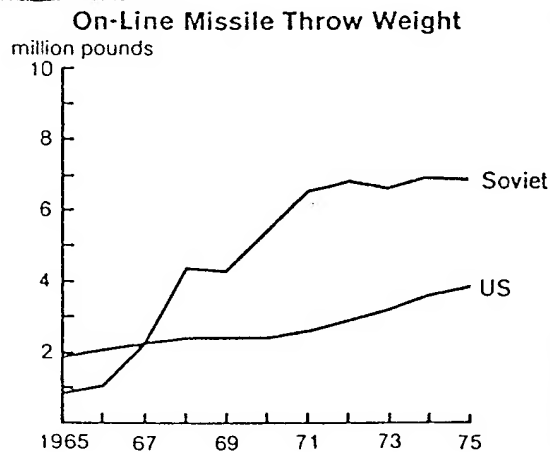
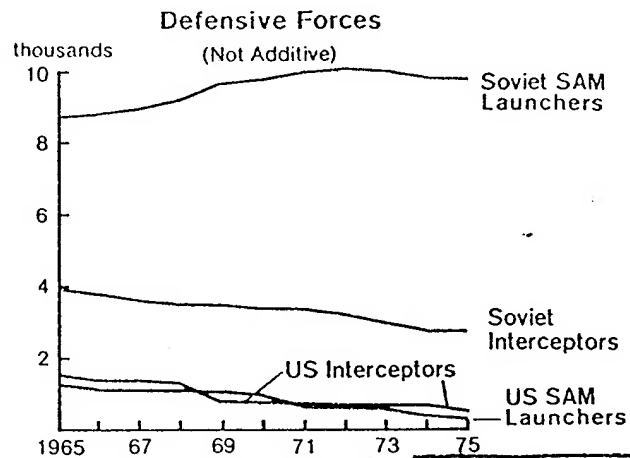
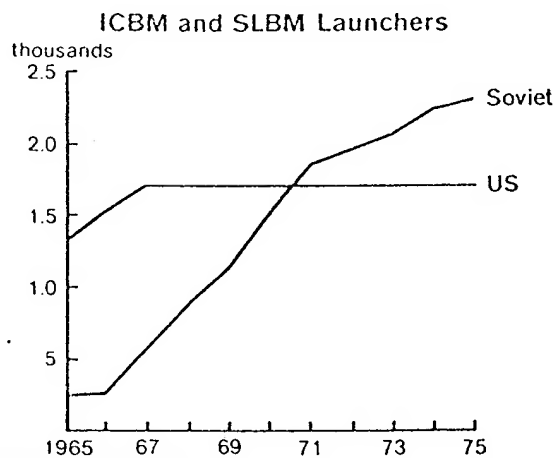
- The Moscow ABM system would provide little protection against a massive attack.
- The air defenses could not cope with aircraft using low-altitude penetration tactics or high-performance air-to-surface missiles.
- The ASW forces would be unable to prevent most Western SSBNs from launching their missiles.



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Figure 1.

### Historical Trends in Selected Aspects of Strategic Forces



\* Excludes ICBM silo launchers under construction or conversion and SLBM launchers on SSBNs undergoing sea trials, conversion, or shipyard overhaul. Missile payloads composed of MRVs (which are not independently targetable) are counted as one RV.

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4. It is apparent that the Soviet leaders see no contradiction between their policies of detente and arms limitation negotiations and their continuing buildup of strategic forces. Their programs for strategic forces continue to be vigorous and broad in scope despite the fact that the USSR has already achieved a powerful deterrent as well as recognition as the strategic equal of the US.

5. *The Director, Defense Intelligence Agency, the Assistant Chief of Staff, Intelligence, Department of the Army, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe the preceding discussion understates Soviet achievements vis-a-vis the US. They would note that an entire new generation of at least eight strategic offensive missiles is in advanced development or test; that Soviet general purpose forces have been substantially improved—especially in the areas of firepower, mobility, and chemical, biological, and electronic-warfare capabilities; and that general war survival programs, defense spending, and directed-energy weapons development have already proceeded well beyond earlier expectations and are now impinging upon the military balance in a number of areas. In terms of the dynamics of strategic balance, they believe the USSR's overall war waging and survival capability is now substantially greater than estimated. Moreover, they believe that improvements in Soviet war waging potential are proceeding with far greater momentum than is true for the Free World.*

#### B. Theater Forces

6. Since the mid-1960s, the Soviets have carried out a major expansion and renovation of their general purpose ground and air forces, and there have been important changes in the organization, training, and operations of these forces. The Soviet ground and tactical air forces have been substantially expanded and modernized and we estimate that the manpower in these forces now stands at more than 2 million men. The ground forces have received new armored vehicles, more artillery, and greatly improved air defense systems. The tactical air forces have received new aircraft with greater payload and range capabilities, reflecting a shift from a traditional air defense orientation toward a broader range of offensive as well as defensive missions. Soviet ground and tactical air force weapons systems have become increasingly sophisticated. Some of the newest aircraft models are

roughly comparable to operational Western equipment, and some of the new ground forces equipment is superior.

7. These developments reflect Soviet responses to changing concepts of the likely nature of a war in Europe and to the challenge of worsening relations with China. The result has been a significant improvement in Soviet capabilities for theater-level warfare in both nuclear and non-nuclear contexts:

- Soviet military planning appears to be based on the belief that Warsaw Pact theater forces now in Central Europe are not only capable of containing a NATO attack in the early days of a conflict, but are also capable of conducting a non-nuclear offensive into West Germany.
- The Soviets evidently are prepared, if necessary, to initiate a land offensive in Europe without prior large-scale reinforcement with ground forces from the USSR, and they have developed high-risk plans for non-nuclear air strikes against NATO's air and nuclear forces.
- The Soviets also have substantially increased the nuclear strike capabilities of their theater forces, providing them with new options for limited nuclear warfare at the theater level and reducing their dependence on USSR-based nuclear forces.
- They have deployed sufficient forces along the Sino-Soviet border to contain any likely Chinese attack and to undertake limited offensive operations.

8. The Soviet Union's willingness and determination to maintain its force levels in Central Europe over a long period and at considerable expense can be partly explained in terms of protecting the USSR against perceived threats from NATO and maintaining political control in Eastern Europe. However, the size of the Soviet and other Warsaw Pact forces in the forward area, their doctrine of the offensive, and the across-the-board efforts to improve the capabilities of these forces lead us to believe that these forces are intended to provide clear conventional superiority in the region, to impress Western Europe with the reality and proximity of Soviet power, and to permit major offensive action in the event of war.

9. The Soviets appear committed to maintaining—with their own forces in the region together with

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those of their Warsaw Pact allies—a demonstrable numerical edge over NATO in such key elements of the theater forces as divisions, tanks, artillery, and combat aircraft. The Soviets do not, however, separate Europe from the larger context of the aggregate theater and strategic forces available to the USSR and to the West. Given this larger view of the balance, they probably have little confidence that they can either foresee or control the course of a conflict with NATO and are therefore inclined to be very cautious in considering the use of their military force in Europe.

10. The buildup of Soviet forces along the Chinese border in the late 1960s and early 1970s reflected Soviet preparations for a variety of contingencies in the face of a potential threat. The basic posture of the forces is defensive, although Soviet exercises reflect a scenario in which they quickly mount a counteroffensive into China. It is conceivable that under certain circumstances, notably political disintegration in China following Mao's death, the Soviets might intervene militarily. Barring such a contingency, however, we believe that only a direct threat to the security of Soviet territory would be likely to trigger a major Soviet military action against China.

11. In connection with the Soviet drive to maintain superiority of forces in Central Europe and along the Sino-Soviet border, there is ample evidence of further technological improvements in Soviet theater forces. To reverse this trend would require a major change in policy by a political leadership with different priorities and the power base to overcome current institutional positions.

12. *The Director of the Bureau of Intelligence and Research, Department of State, believes that paragraphs 7-11 exaggerate the USSR's confidence in its theater forces against NATO. He concedes that the Soviet forces are formidable, but notes that there is a persuasive body of evidence that:*

- The Soviets are extremely conservative in their reckoning of the balance.*
- They believe they have reason to doubt whether their forces could succeed in carrying out the kind of massive offense which Soviet strategy for a war in Europe requires.*

*The Director of INR believes the Soviets' objectives for improving their theater forces have been based*

*upon specific Soviet perceptions of deficiencies for their mission rather than upon an abstract notion of preserving an existing advantage or on the expectation that marginal increments to their forces would have much political impact. INR believes that the principal Soviet objectives in force improvements have evidently been to deal with three main problem areas:*

- The Soviets are continuing to provide more modern aircraft to Frontal Aviation in order to reduce the risks in the initial air operation against NATO.*
- As they have moved to contemplate the possibility of limited nuclear war, the Soviets have evidently seen themselves at a disadvantage in their ability to use nuclear weapons in close proximity to the battlefield. Evidence of a tube round, of a subkiloton air-delivered weapon, and of a guidance system in a follow-on to the FROG suggests that the Soviets are attempting to acquire a battlefield nuclear option.*
- Concerned over developments in Western anti-tank weapons, the Soviets have been deploying more tanks, examining ways of suppressing antiarmor fire, and experimenting with forms of maneuver which enhance survivability of tanks and armored personnel carriers (APCs) on the battlefield.*

### C. Naval Forces

13. Over the past decade there have been major developments in Soviet naval policies as well as significant improvements in the USSR's naval capabilities. In addition to the emergence of its nuclear-powered ballistic missile submarine (SSBN) fleet as a principal component of the Soviet strategic forces, the Soviet navy has evolved from a force oriented almost exclusively to the defense of Soviet coastal regions to a force with growing capabilities for combat in more distant areas. The Soviet navy continues to have important defensive missions, but it also has been increasingly used to support Soviet foreign policy in peacetime.

- With relatively little need to protect extended sea lines of communication or to project power ashore in distant areas, the Soviet navy has concentrated its efforts on capabilities to challenge the ability of US and Allied naval forces to*

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control the seas and project power to distant areas.

- Since the mid-1960s, the Soviet navy has dramatically extended its operations beyond its home waters, establishing a major naval presence in the Mediterranean and a conspicuous but less powerful presence in the Indian Ocean.
- Its capabilities for these missions have been significantly improved by the introduction of a series of larger and more sophisticated surface ships (now including ASW aircraft carriers) as well as submarines and aircraft.

14. The increase in Soviet naval activity over the past decade has been one of the several factors which have contributed to the USSR's superpower image. The Soviet leadership presently seems to support the concept of a balanced navy which, while retaining its emphasis on defensive missions, can carry out a variety of operations in peacetime as well as in wartime.

15. *The Director, Defense Intelligence Agency, the Assistant Chief of Staff, Intelligence, Department of the Army, the Director of Naval Intelligence, Department of the Navy, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that paragraphs 13 and 14 do not adequately reflect the dynamic transformation of the Soviet navy from a primarily defensive force with a limited strategic strike capability to an open ocean force capable of performing, to varying degrees, the traditional functions of major naval powers.*

#### D. Third World Activities

16. The Soviets also have made increasing use of their military resources to support their policies in the Third World.

- They have adopted a more ambitious policy for the use of the Soviet navy by deployments into areas far beyond past operating areas.
- They have developed military aid into a major tool of their foreign policy interests, with primary present concentration on the Middle East.
- Their military airlift capabilities have played a significant role in some critical situations.

The Soviets have experienced setbacks in some of their efforts to extend their influence in this way, and

there is evidence of some opposition to expending resources on these programs. Nevertheless, the Soviets are continuing to use their military resources to further their interests in the Third World.

#### E. Advanced Technology

17. The Soviets have long accorded high priority to research and development on military weapon systems and related technologies. In the past decade the Soviet scientific and industrial establishment has demonstrated the capacity to develop and produce a broad array of sophisticated military systems. The Soviets remain concerned about potential US developments in the area of new types of weapons which could alter the strategic balance, and they are themselves conducting R&D programs of broad scope and considerable vigor. Programs which bear especially close watching include efforts related to directed-energy weapons and to ASW sensors.

#### F. Soviet Defense Spending

18. Estimates of Soviet defense expenditures have recently been revised on the basis of new information, much of which is still being evaluated. The discussion in this section is based on the interim findings of the Central Intelligence Agency and the data presented are subject to revision.<sup>2</sup>

19. Soviet defense expenditures in rubles are estimated to have grown every year since 1970, and growth has been evident in all of the major resource categories—investment, operating, and RDT&E costs. The average annual rate of growth in ruble expenditures during 1970-1975 was some 4-5 percent (see Figure 2). The annual growth rate in 1973-1975, however, was about 5-6 percent, reflecting primarily the deployment of a new generation of strategic missiles (see Figure 3). Historically, the rate of growth in total Soviet defense spending has increased during periods when the USSR reequips its strategic forces with new weapons and has tended to decline as these programs reach completion.

20. The Central Intelligence Agency now believes that Soviet defense spending absorbs some 11-13 percent of the Soviet gross national product, whereas

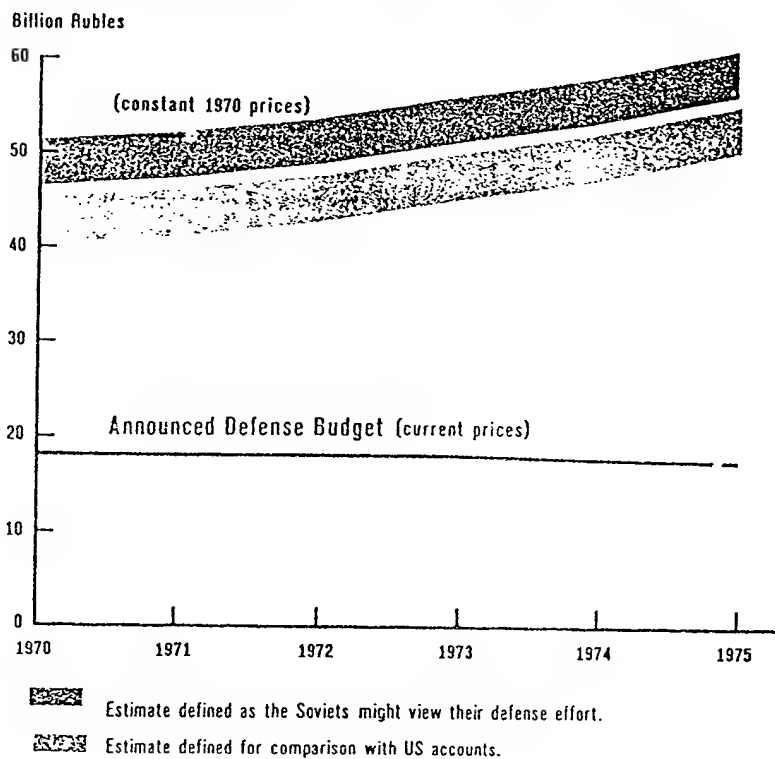
<sup>2</sup>See the CIA reports entitled "Estimated Soviet Defense Spending in Rubles, 1970-1975" (SR 76-10121, May 1976 Secret), and "A Dollar Comparison of Soviet and US Defense Activities, 1965-1975" (SR 76-10165, July 1976, Secret).

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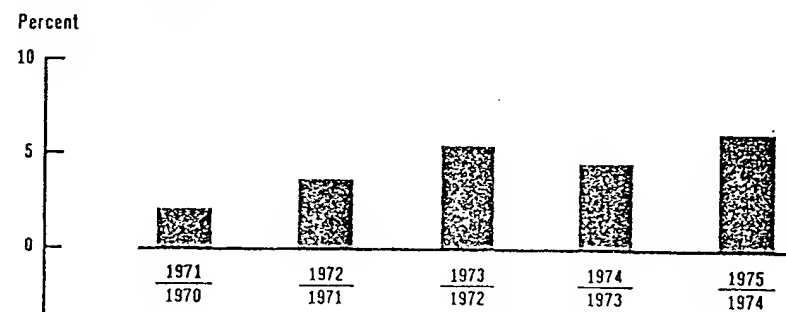
Figure 2.

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### Estimated Soviet Expenditures for Defense, 1970-1975



### Annual Rates of Growth\*



\*Calculated in 1970 Rubles.

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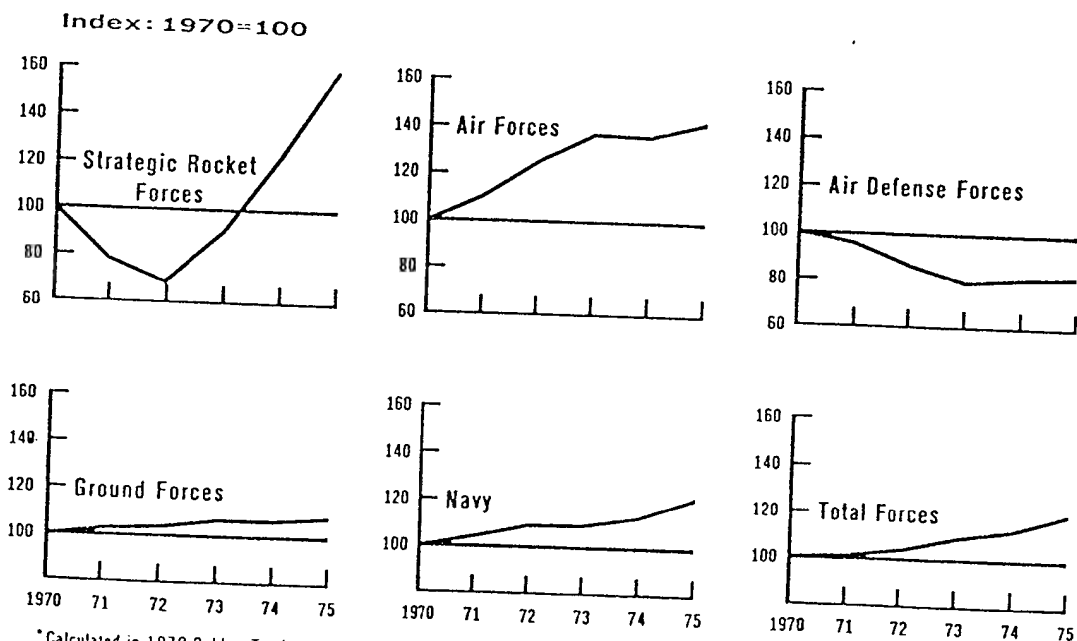
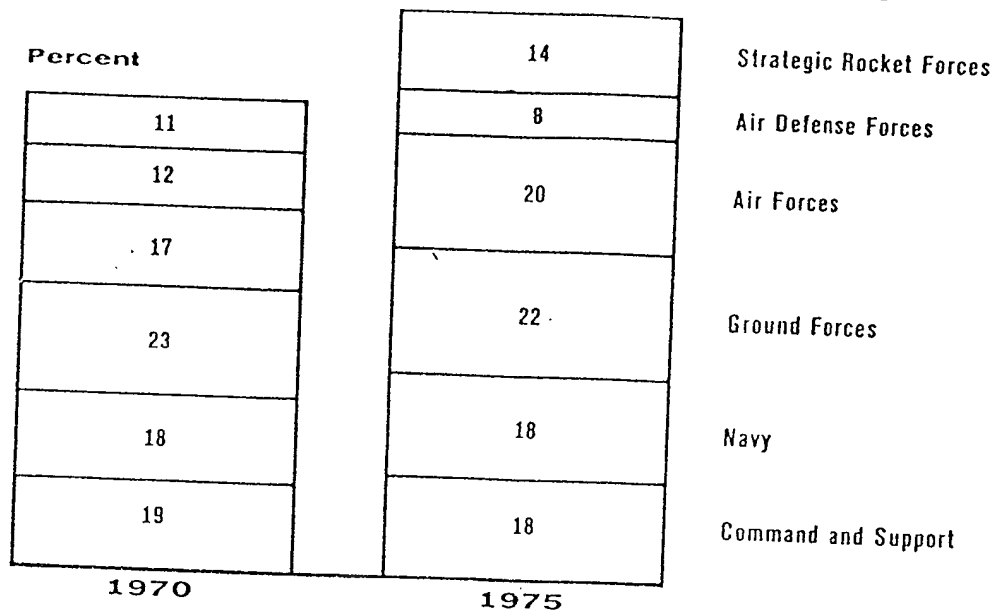
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Investment and Operating Expenditures for the Soviet Armed Forces\*

Figure 3.



\* Calculated in 1970 Rubles. Totals shown cover all investment and operating costs, but exclude R&D expenditures.

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it had previously estimated that defense took some 6-8 percent of GNP. (The Director, Defense Intelligence Agency, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, believe that the percentage of GNP devoted to defense spending could be substantially higher.) The revised estimate does not mean that the proportion of Soviet GNP committed to defense programs has increased—only that the appreciation of this proportion has changed. It implies that Soviet defense industries are far less efficient relative to other sectors of the economy than formerly believed, and that Soviet leaders have been more willing than previously believed to forego economic growth and consumer satisfaction in favor of military capabilities.

21. Much work remains to be done in assessing the impact of military spending on the Soviet economy and its implications for Soviet policy decisions. We have seen no evidence, however, that economic considerations are deterring the Soviets from continu-

ing the present pace and magnitude of their defense effort.

## II. TRENDS IN FORCES

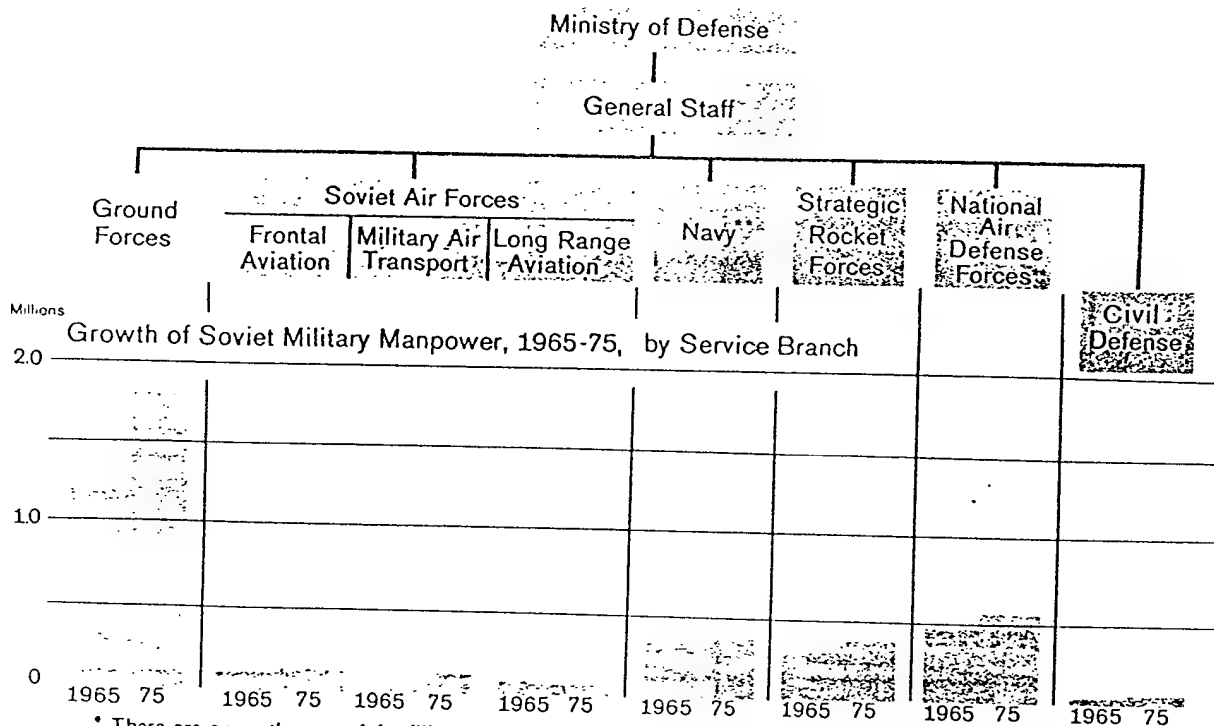
22. This section briefly describes the current status and basic trends in the development of the various branches of the Soviet armed forces (see Figure 4). It should be read in conjunction with Section III, which addresses the same overall pattern of development from a different perspective.

### A. Command Structure

23. The Soviets have devoted high-level attention to a long-term and expensive program to enhance command and control capabilities throughout the armed forces. This program reflects a belief that battle management capabilities will have a decisive influence, especially in a contest between forces of

Branches and Manpower of the Soviet Armed Forces 1965 & 1975\*

Figure 4.



\* There are currently some 4.4 million men in the Soviet Armed Forces. This does not include some 450,000 men in the frontier troops (KGB) and internal troops (MVD), who are armed and organized into units.

\*\* Includes aviation personnel.

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comparable strength. The Soviets stress that forces and weapons must also be effectively controlled in peacetime as well as in wartime, if they are to serve the national policy objectives for which they were created.

24. The ultimate decision to employ Soviet forces rests with the Politburo, either collectively or in some subset such as the Defense Council (see Figure 5). The decision would be implemented by the national military authority—the Supreme High Command—through its executive arm, the General Staff. The political leadership—mainly in the person of Brezhnev, who is both Chairman of the Defense Council and the predesignated wartime Supreme Commander-in-Chief—would continue to dominate all aspects of the political-military command structure.”

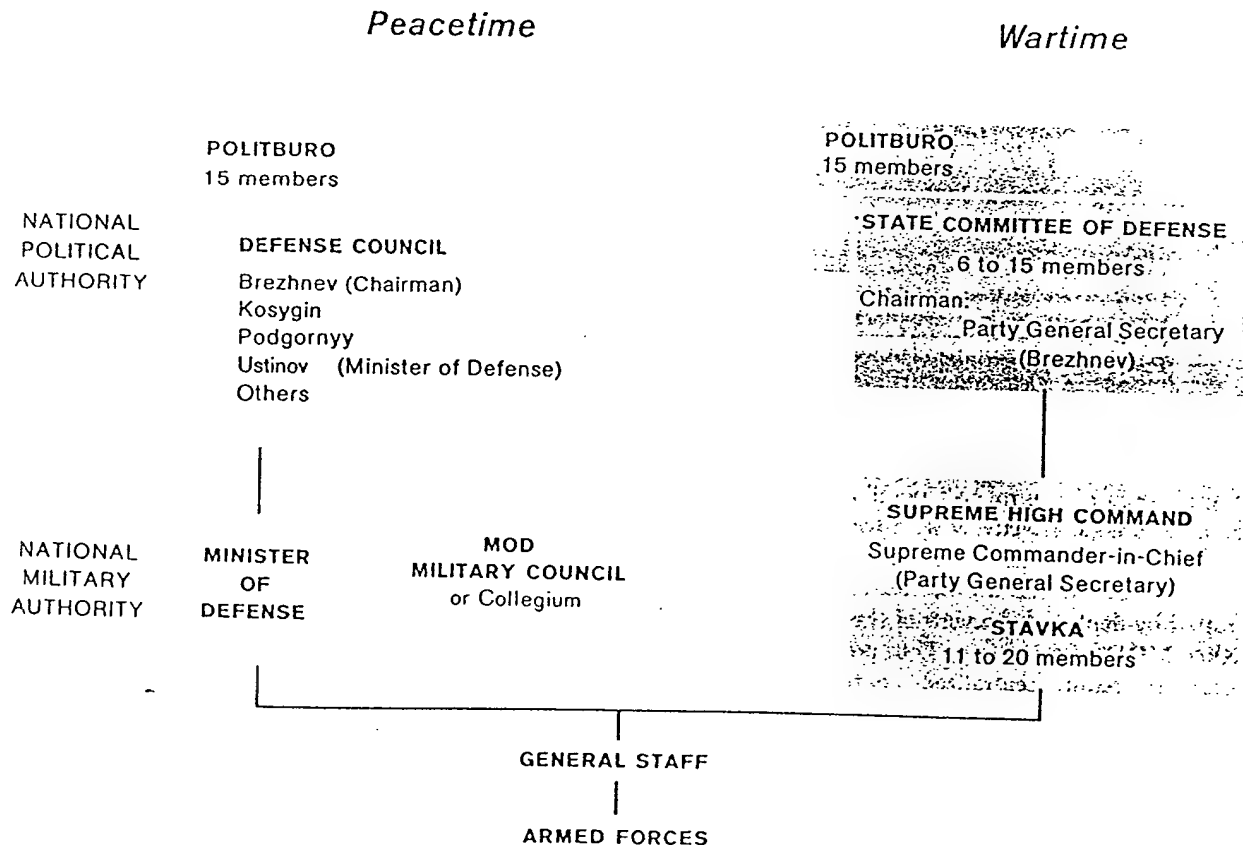
25. The General Staff exercises centralized operational control over the Soviet armed forces (see Figure 6) [

] This arrangement provides the national political and military leadership with rapid, reliable, and secure communications for the control of all Soviet forces, and efforts are being made to bring East European forces under the same integrated system. [

26. While clearly a preferred Soviet choice, this highly centralized system increases the high com-

### Soviet Command Authorities: Transition to Wartime

Figure 5.



\* The Director, National Security Agency, believes that during wartime the Defense Council will expand its membership to function as the national political authority, and as such will retain its present title.

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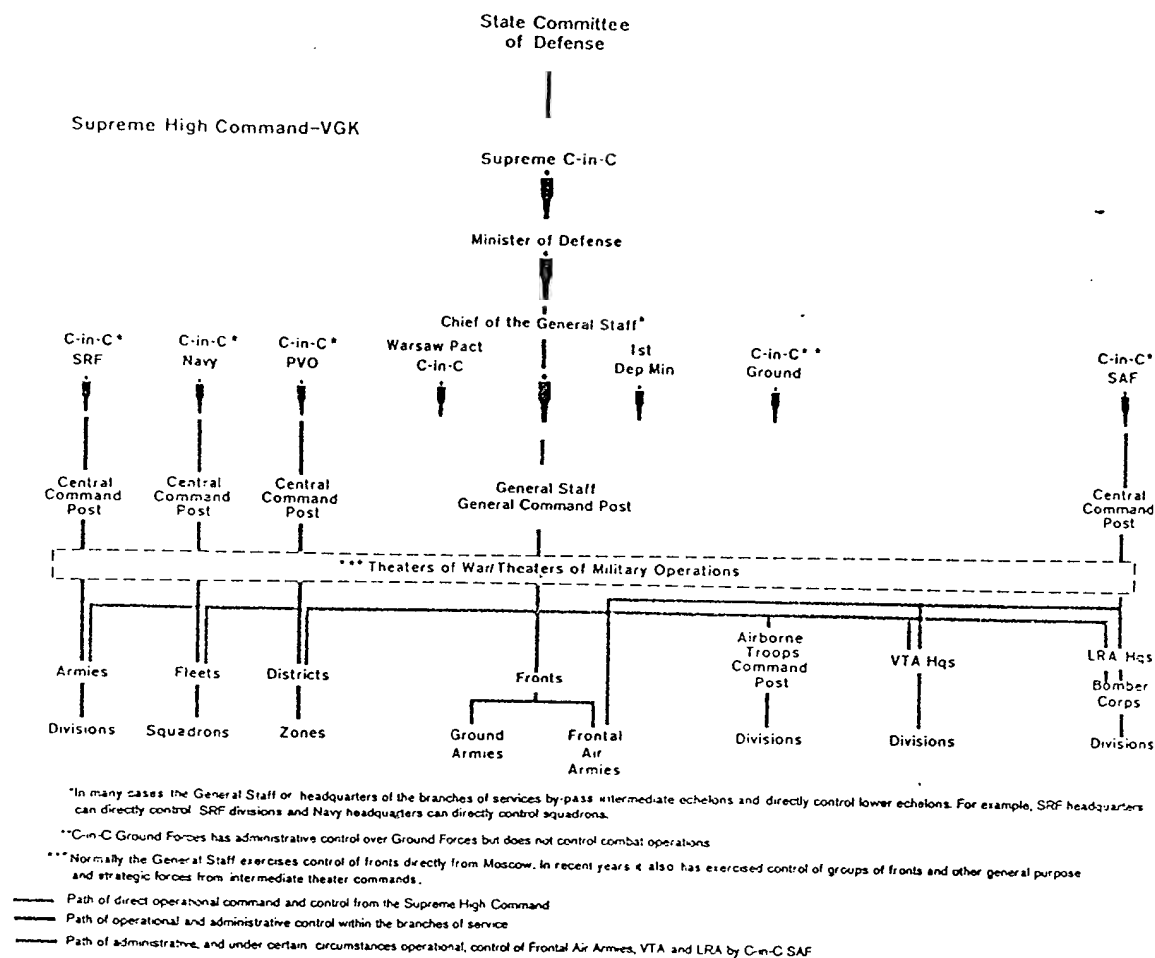


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# Centralized Operational Control of Soviet Forces in War

Figure 6.



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mand's span of control to a point where it might not be able to cope effectively with widely dispersed and fast-paced operations. There has been

an effort to retain centralized control over strategic planning and critical decisions while decentralizing the execution of operations.

27. Soviet doctrine places an emphasis on the survivability, mobility, and combat readiness of command and control elements. Since 1968, almost 300 hardened command facilities have been constructed for major headquarters, including those of the national political and military leadership, the General

Staff, the service commanders, and many lower echelon commands. In addition, two command cruisers entered the navy in the early 1970s, airborne command posts are being deployed for many echelons, and mobile communications units serve almost all echelons of command.

28. Diversification and redundancy have long been characteristics of Soviet command and control systems, which make extensive use of various means of communications. The overall effectiveness of these systems has improved substantially in recent years.

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[ Military use of communications satellites is growing rapidly and, since 1974, has supplemented high frequency networks for long distance communications and added much needed message-handling capacity.

29. Soviet doctrine emphasizes the importance of automation in handling large volumes of data and providing real-time support for decision-making and battle management. The Soviets have done considerable conceptual work on the automation of troop control and have field tested elements of automated systems. Progress in this area has been retarded by high costs and the state of Soviet computer technology, but we believe automation efforts are becoming increasingly effective. The Soviets have attempted to acquire applicable Western technology.

#### B. Ground Forces

30. The Soviet army currently maintains a force of 170 active divisions at varying strengths in its peacetime ground forces (see Table I). These forces are highly mechanized, have a total of some 45,000 tanks, and are deployed to cover all of the USSR's land borders. The heaviest concentration is oriented toward Western Europe, with a large component facing China (see Figure 7).

31. Since the mid-1960s, the Soviets have carried out a major expansion and renovation of their general purpose forces, including a buildup to a force of some 40 divisions along the Sino-Soviet border as well as strengthening of the forces facing NATO. We estimate that the manpower in Soviet ground and tactical air forces now stands at more than 2 million men (see Figure 8). A wide range of newly developed weapon systems of increased sophistication has been intro-

duced in the same period, and the high proportion of older-model equipment that formerly prevailed has been considerably reduced. These changes have not only expanded the size of Soviet forces but have also made them more balanced and operationally flexible, with significantly improved capabilities for both nuclear and non-nuclear warfare.

32. The numbers of tanks, artillery pieces, and air defense weapons in Soviet units have been substantially increased and a variety of other changes in organization and equipment have brought about larger and more capable tank and motorized rifle divisions (see Figure 9). The Soviets also have maintained and modernized their airborne forces. Technical improvements, particularly in air defense and artillery weapons, and improvements in the design of APCs have contributed to greater theater force capabilities. Sophisticated and highly mobile ground-based air defense systems are being assigned to the ground forces in large numbers, and this has enabled tactical air forces to direct more of their resources to offensive missions. In addition, motor transport capability has been added not only to supply ammunition for the added weapons, but also to improve overall logistic capability. These improvements are being introduced as elements of long term and ongoing programs. Consequently, ground force units have a mixture of old and new equipment, and some units in the USSR still have substantial shortages of selected items such as APCs and trucks.

33. The other Warsaw Pact forces—which have some 55 divisions—have been reorganized, expanded, and modernized, and have assumed greater responsibilities in Pact military plans. Improvements in these forces have generally followed the Soviet lead, but they have tended to lag by a few years.

#### C. Air Forces

34. This section covers the three forces—Frontal Aviation, Military Transport Aviation, and Long Range Aviation—which the Soviets group together administratively as the Soviet Air Forces. Other aviation elements of the Soviet armed forces—Naval Aviation and Aviation of Air Defense—are discussed separately in Sections D and F below.

##### *Frontal Aviation*

35. The Soviets have a total of some 4,600 combat aircraft in their tactical air forces (see Table II). There

TABLE I

SOVIET GROUND FORCES, MID-1976

Manpower <sup>1</sup> .....	1,815,000
Tanks .....	45,000
Divisions .....	170
Tank Divisions .....	48
Motorized Rifle Divisions .....	114
Airborne Divisions .....	8

<sup>1</sup> Includes combat, combat support, and service personnel and non-divisional headquarters staffs, administrative units, and training units.

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**Location of Ground Forces Divisions Mid-1976**

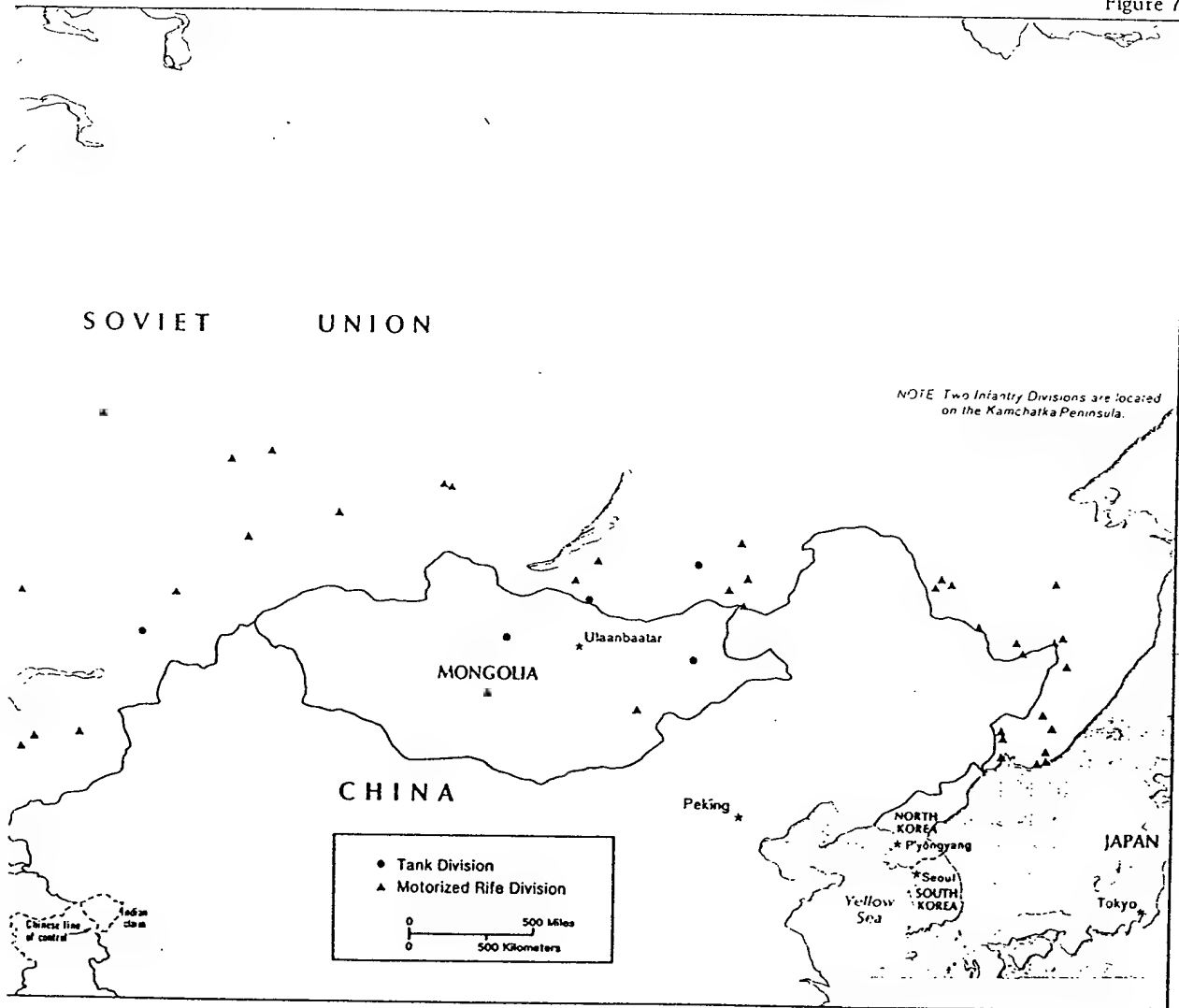


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Figure 7.

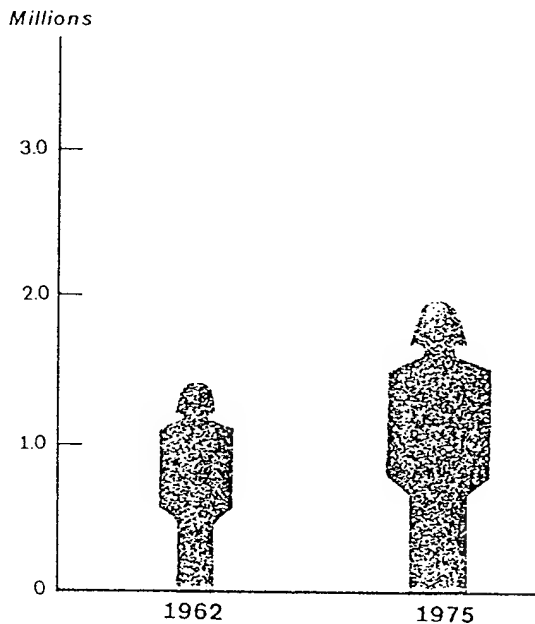


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### Growth of Soviet Ground and Tactical Air Forces Manpower\* Figure 8.



\* Changes in manpower over time are principally due to the buildup opposite China (some 300,000 men), increases associated with the movement of Soviet forces into Czechoslovakia (at least 30,000 men) and changes in the size of Soviet ground forces units since the late 1960s.

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has been some growth in the number of aircraft deployed over the past decade because of the buildup against China, but the forces opposite NATO have been relatively stable in numbers. In the European theater other members of the Warsaw Pact could supplement these forces with some 1,200 similar tactical aircraft. These totals do not include fighters assigned to national air defense commands or trainers and combat reserve aircraft.

36. The most significant change in the tactical air forces has been the acquisition of a new generation of weapon systems, which represent a departure from previous Soviet practices. New aircraft such as the Fitter C, Flogger, and Fencer have substantially improved payload-range capabilities and more sophisticated avionics systems. At the same time, the Soviets have been developing a variety of new tactical weapons, including short-range air-to-surface missiles and cluster munitions. In addition, the introduction of

TABLE II

#### SOVIET FRONTAL AVIATION, AUGUST 1976

<i>Counter Air</i> .....		2,005
MIG-23	Flogger B.....	745
MIG-21	Fishbed J/K/L.....	770
MIG-21	Fishbed D/F.....	490
<i>Ground Attack</i> .....		1,790
SU-24	Fencer A.....	95
MIG-27	Flogger D.....	170
SU-17	Fitter B/C.....	320
MIG-21	Fishbed J/K/L.....	55
MIG-21	Fishbed D/F.....	145
YAK-28	Brewer.....	170
SU-7	Fitter A.....	410
MIG-17	Fresco.....	350
IL-28	Beagle.....	75
<i>Reconnaissance/ECM</i> .....		725
MIG-25	Foxbat B/D.....	105
MIG-21	Fishbed H.....	305
YAK-28	Brewer.....	230
IL-28	Beagle.....	80
IL-20	Coot A.....	5
<i>Total Soviet Frontal Aviation</i>		
<i>Combat Aircraft</i> .....		4,520

the Foxbat has provided, for the first time, a high performance multisensor reconnaissance aircraft.

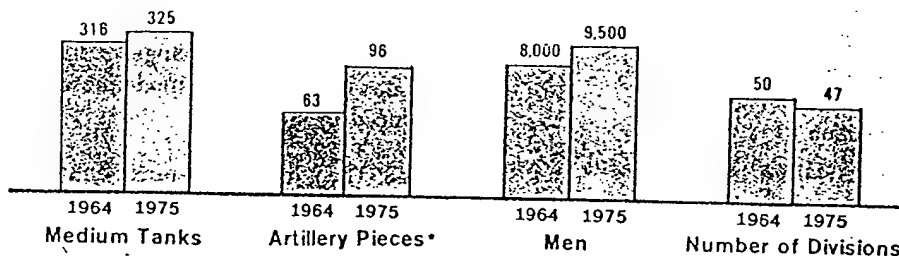
37. These new developments reflect a shift from a traditional air defense orientation toward a broader range of offensive as well as defensive missions. But the full realization of these possibilities is still some way off. Despite the deployment of new aircraft with capabilities similar to the better Western aircraft, the majority of Soviet tactical aircraft still have short ranges and low payloads and lack the sophisticated weapon systems and avionics of US tactical fighters and attack aircraft. Nevertheless, the capabilities of Frontal Aviation clearly are changing (see Figures 10 and 11).

38. In addition to the introduction of new tactical aircraft with improved payload-range capabilities, the Soviets also have increased the number of nuclear-capable aircraft in service. This would permit more

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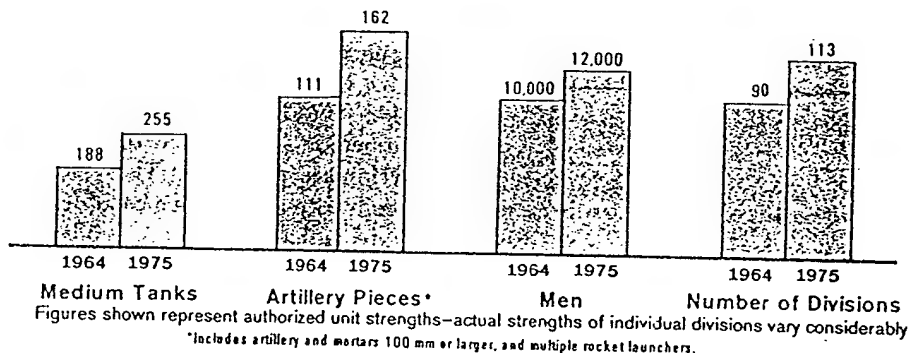
### The Soviet Tank Division, 1964 and 1975

Figure 9.



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### The Soviet Motorized Rifle Division, 1964 and 1975



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flexibility in the conduct of nuclear warfare in Europe. The Soviets also have provided protective shelters for almost all of their tactical aircraft deployed in Eastern Europe.

#### *Military Transport*

39. Military Transport Aviation (VTA) operates a total of some 700 aircraft, primarily medium-range turboprop transports (see Table III). This force is organized and well trained for missions on the periphery of the USSR, but does not match the US in ability to provide long-range heavy lift support. Deployment of a new heavy transport, the IL-76, has begun, however, and this will increase long-distance lift capabilities. The airlift capabilities of VTA are supplemented by Aeroflot, which could double the Soviet capability to airlift troops and has some 200 AN-12s that could be used to transport bulk cargo.

TABLE III

#### SOVIET MILITARY TRANSPORT AVIATION, MID-1976

IL-76 Candid .....	25
AN-Cock .....	50
AN-12 Cub .....	615
Total .....	690

40. A principal mission of VTA is the delivery of airborne assault forces. Other missions include movement of troops, equipment, and supplies and the transport of nuclear weapons. In recent years the peacetime responsibilities of VTA have expanded to include such tasks as the delivery of military and economic aid materials, logistics support for Soviet forces in Eastern Europe, and disaster relief missions.

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These activities have provided valuable experience for VTA units, as demonstrated by their growing competence in such operations as the aerial resupply of Arab forces during and after the 1973 fighting and their missions to Angola during the civil war.

#### Long Range Aviation

41. Long Range Aviation (LRA) consists of some 850 bombers, missile carriers, reconnaissance aircraft, and tankers (see Table IV). LRA aircraft have a major role in the peripheral areas, providing capabilities for non-nuclear as well as nuclear warfare. LRA also continues to function as an element of the Soviet intercontinental attack forces, although its relative

importance in this role has declined over the years as the capabilities of missile forces increased.

42. LRA's Bear and Bison long-range bomber force has been virtually unchanged during the past decade. It has been neither modernized nor significantly reduced in numbers.

43. The intermediate-range bomber force was partly modernized in the 1960s and early 1970s, although the total number of aircraft in service declined somewhat. Some of the 1950s-vintage LRA Badgers which still comprise the bulk of the forces were upgraded by being equipped with air-to-surface missiles (ASMs) in the late 1960s, and a new bomber (Blinder) was deployed during the same period. Despite these changes, however, the overall force is aging and becoming increasingly vulnerable to modern air defenses.

44. The introduction of the modern Backfire bomber in 1974 opened a new phase in the development of LRA. The Backfire is a versatile aircraft with an extensive capability for use in various theater and naval missions, and it also has capabilities for operations against the continental US (see Figure 12). We are agreed that its introduction portends a major improvement in LRA capabilities for peripheral missions, but there are differing views within the Intelligence Community about Soviet intentions to use it in the intercontinental role.

TABLE IV

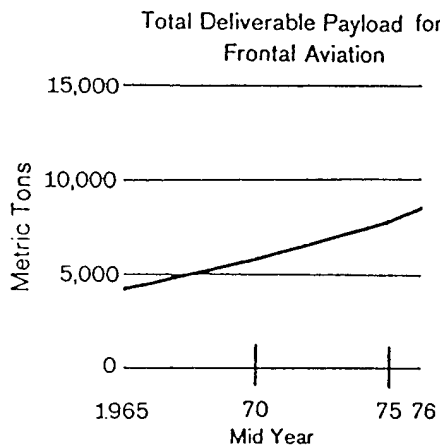
#### SOVIET LONG RANGE AVIATION, MID-1976

M-Type Bison.....	85 <sup>1</sup>
TU-95 Bear.....	105
Backfire.....	20
TU-16 Badger.....	475
TU-22 Blinder.....	165
Total.....	850 <sup>2</sup>

<sup>1</sup> Includes about 35-45 Bison configured as tankers.

<sup>2</sup> The totals do not include about 600 similar bomber aircraft assigned to the navy in strike, reconnaissance, and training roles.

#### Growth in Soviet Frontal Aviation Capability 1965-1976



#### Average Deliverable Payload/Aircraft

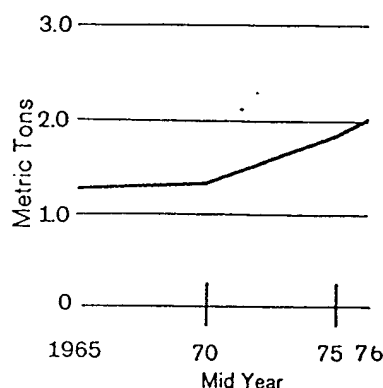


Figure 10.

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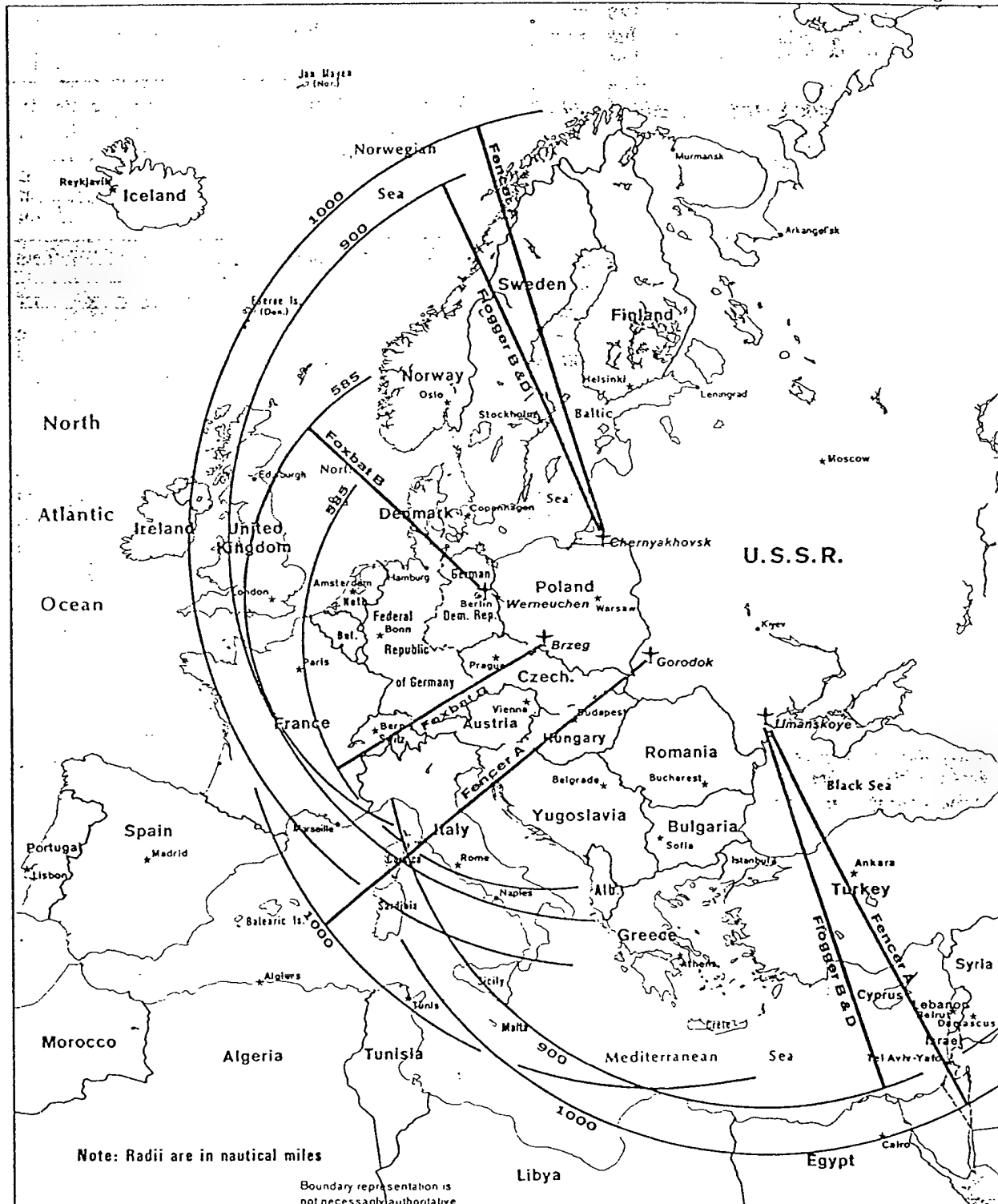
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# Soviet Frontal Aviation Combat Radius Contours, European Theater

Figure 11.



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45. The performance of the Backfire is also a subject of differing views within the Intelligence Community. On the basis of a reanalysis which it has recently completed, the Central Intelligence Agency now estimates that, when flown on a subsonic, high altitude mission with a 10,000 pound bombload, Backfire has an unrefueled radius of either 1,800 or 2,150 nm [ ] and range of either 3,500 or 4,150 nm [ ] (The spread in CIA's figures reflects different assumptions about the aircraft's wing design.) The Director, Defense Intelligence Agency and the Assistant Chief of Staff, Intelligence, Department of the Air Force, after extensive review and critique do not accept the CIA reanalysis as valid. They continue to estimate Backfire's unrefueled, subsonic, high altitude radius and range at 2,900 and 5,400 nm [ ] respectively, with a 20,800-pound bombload. These differing assessments are currently under review in the Intelligence Community. The subject of Backfire's performance will be addressed at greater length in the forthcoming NIE 11-3/8-76, "Soviet Forces for Intercontinental Conflict Through the Mid-1980s."

#### D. Naval Forces

46. The Soviets describe nuclear submarines and naval aviation as the main striking forces of their navy, but they also maintain a large surface force (see Table V). These forces are divided among four major fleets (see Figure 13). Their capabilities have been substantially improved by the introduction of new weapon systems over the past decade, although the number of ships has not grown and has even declined slightly in some categories. During this same period the Soviet navy has acquired new missions, expanded its operations in distant areas, and conducted larger and more complex training exercises.

47. The strategic attack role of the navy grew significantly in the late 1960s and early 1970s with the deployment of modern SSBNs. The navy, which once had only a small force of surface-launched missiles, now provides a major component of Soviet strategic attack and deterrence capabilities (see Figure 14).

48. During this same period the Soviets continued to modernize their general purpose naval forces. Systems designed to counter surface forces—particularly the US carriers—were an early priority, and in more recent years special attention has been given to the ASW problem both against SSBNs and general

TABLE V

#### SOVIET NAVAL FORCES, MID-1976

Major Surface Combatants .....	226
ASW Aircraft Carrier .....	1
Helicopter Carriers .....	2
Cruisers .....	32
Destroyers .....	87
Frigates .....	104
Minor Surface Combatants .....	1,200
Submarines .....	337
Ballistic Missile .....	80
Nuclear .....	59
Diesel .....	21
General Purpose .....	257
Nuclear .....	81
Diesel .....	176
Naval Aviation <sup>1</sup> .....	1,064
Rece/Strike .....	642
ASW-Fixed Wing .....	174
ASW-Helicopters .....	248

<sup>1</sup> Includes aircraft attached to Naval Aviation HQ in Moscow. These aircraft are combat capable but are employed in a training role.

purpose submarines. Amphibious assault forces—ships and the naval infantry—have also been modernized, although they remain a small component with limited objectives in the overall structure of the navy. There has been some improvement in capabilities for providing logistics support for deployed forces, although this apparently remains a comparatively low priority.

49. Trends in the development of ASW forces have included the introduction of new types of ships, submarines, and aircraft, as well as improvements in sensors and weapons (see paragraphs 96 ff.). Two large Moskva-class ASW helicopter carriers entered service in the late 1960s, and the new Kiev-class aircraft carriers also are believed to have a primary ASW mission. The cruisers and destroyers built since the mid-1960s have been designated as "large ASW ships" by the Soviets, and the more recent types have been armed with antisubmarine missiles. The newer classes of attack submarines also have improved capabilities for ASW missions, and new land-based

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Figure 12.

# Distance Contours from Long Range Aviation Home and Staging Bases



## CAPABILITIES FOR HIGH-ALTITUDE SUBSONIC MISSION

	UNREFUELED		ONE REFUELING <sup>1</sup>		PAYLOAD
	RADIUS	RANGE	RADIUS	RANGE	
Bear A Bomber	4,150	7,800	—	—	25,000-lb. bombload
Bear B/C ASM Carrier	3,950	7,150	5,050	9,200	1 AS-3 (25,000 lbs.)
Bison B/C Bomber	2,800	5,250	3,950	7,300	25,000-lb. bombload
Backfire B Bomber <sup>2</sup>					
DIA/Army/USAF:	2,900	5,400	4,000	7,500	20,800-lb. bombload
CIA (High)	2,150	4,150	3,200	6,250	10,000-lb. bombload
(Low)	1,800	3,500	2,800	5,500	

1. Using a Bison tanker.

2. See paragraph 45 for a discussion of Backfire performance estimates.

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ASW aircraft were deployed in the late 1960s and early 1970s. Despite these measures, however, Soviet ASW capabilities are still inadequate.

50. AnticARRIER forces relying on antiship cruise missiles were already well developed by the mid-1960s and have been further improved. Soviet Naval Aviation has a substantial number of aircraft with a major role in anticARRIER operations. Older naval bombers have been equipped with new air-to-surface missiles, and with the new Backfire bomber the navy will be able to conduct strike missions over all the major sea lanes to Europe and over much of the western Pacific. Other significant developments for anticARRIER warfare include the introduction of submerged-launched cruise missiles for submarines, and improved ocean surveillance capabilities through the introduction of new aircraft and satellite reconnaissance systems. In addition, some new surface ships, including the Kiev-class aircraft carrier, have been equipped with antiship missiles.

51. The development of the Kiev-class aircraft carrier reflects a move toward a greater role for Soviet aircraft at sea. This trend began with the deployment of the two Moskva-class helicopter carriers in the late 1960s. While both of these ship classes are oriented toward ASW missions, the Kiev is capable of operating small V/STOL fighters which could be employed in air defense, reconnaissance, and perhaps limited tactical attack missions.

#### E. Strategic Rocket Forces

52. The Strategic Rocket Forces (SRF) currently have a total of about 1600 ICBM launchers (including about 200 launchers under construction, being dismantled, or off-line for conversion) and almost 600 MRBM and IRBM launchers at deployed complexes (see Table VI and Figure 15). The ICBM force is the result of a rapid buildup since the mid-1960s, while the shorter-range missiles had already reached their peak deployment by 1965. The Soviets continue to move forward with efforts to modernize the SRF.

53. The ICBM force surpassed that of the US in numbers of launchers by 1970 and was 50 percent larger by 1972 when the SALT ONE agreement prohibiting additional fixed ICBM launchers was reached. This quantitative growth was accompanied by steady efforts to improve the quality of the force, as successive generations of missiles were developed and

TABLE VI

#### SOVIET STRATEGIC ROCKET FORCES OPERATIONAL LAUNCHERS, MID-1976

MRBMs/IRBMs .....	571
SS-4 Aboveground .....	408 <sup>1</sup>
SS-5 Aboveground .....	42
SS-4 Silo .....	76
SS-5 Silo .....	45
ICBMs .....	1,400
SS-7 Aboveground .....	82
SS-8 Aboveground .....	10
SS-7 Silo .....	57
SS-8 Silo .....	9
SS-9 Silo .....	186 <sup>2</sup>
SS-11 Silo .....	830 <sup>3</sup>
SS-13 Silo .....	60
SS-17 Silo .....	20
SS-18 Silo .....	36
SS-19 Silo .....	110

<sup>1</sup> Another 12 SS-4 launchers are being dismantled.

<sup>2</sup> Excludes 18 SS-9 launchers at the Tyuratam Missile Test Center believed to be operational.

<sup>3</sup> Includes 60 SS-19 silos with SS-11s installed.

deployed. For example, while the construction of silos for the SS-9 and SS-11 missiles was at a peak in the late 1960s, the Soviets already were working on a new generation of ICBMs to narrow the qualitative gap between the US and Soviet forces.

54. The effectiveness of the ICBM force has been increased with each new generation of missiles. Hard-target capability has improved through increased accuracy and higher warhead yields, and more flexibility has been achieved as the new systems have increased azimuth coverage. Increases in the number of warheads were achieved as multiple warhead reentry vehicles (MRVs) were introduced in the early 1970s, followed by MIRVs which are now being deployed.

55. The survivability of the ICBM forces has been greatly improved by the construction of hardened silos and command posts. The force of the early 1960s consisted primarily of relatively vulnerable above-ground launchers. Almost all of the force is now in silos, and measures to improve the hardness of these installations are continuing.

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### Operational Strengths of Soviet Fleets, Mid-1976

Figure 13.

**Baltic Fleet**  
0 Ballistic Missile Submarines  
48 Major Surface Ships  
26 General Purpose Submarines  
205 Combat Aircraft

Kaliningrad

**Northern Fleet**  
51 Ballistic Missile Submarines  
54 Major Surface Ships  
127 General Purpose Submarines  
264 Combat Aircraft

Severomorsk

Sevastopol'

**Black Sea Fleet**  
0 Ballistic Missile Submarines  
65 Major Surface Ships  
25 General Purpose Submarines  
288 Combat Aircraft

**Pacific Fleet**  
29 Ballistic Missile Submarines  
59 Major Surface Ships  
79 General Purpose Submarines  
307 Combat Aircraft

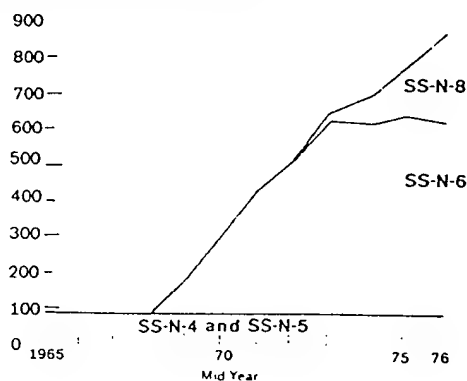
Vladivostok

FLEET HEADQUARTERS

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### Growth of Soviet SLBM Launchers

Figure 14.



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56. The MRBM and IRBM forces, in contrast, are relatively old, vulnerable, and inaccurate. Less than one quarter of these missiles are emplaced in silos, although in recent years protective revetments have been added at most of the soft sites. The missiles themselves date back to the late 1950s, but the gap in the modernization of these forces was offset somewhat by the apparent assignment of targets on the periphery of the USSR to perhaps as many as 300 ICBMs beginning in the late 1960s. In addition, the Soviets have developed a new mobile IRBM, the SS-X-20, with an accurate MIRV payload, and this system is expected to be deployed later this year or early next year. There is evidence that this system will be extensively deployed, significantly increasing Soviet peripheral missile attack capabilities in terms of range, the number of targets which can be engaged, and the damage which can be inflicted. *The Director, Defense Intelligence Agency, and the Assistant Chief of Staff, Intelligence, Department of the Air Force, agree that the SS-X-20 as currently configured is an IRBM, but believe the system has the potential for delivering meaningful payloads to ICBM ranges. They would note that if the Soviets reduced the payload of the SS-X-20 by one or two RVs, or if they used the SS-X-16 payload, the SS-X-20 could reach targets at ICBM ranges (i.e., more than 3,000 nm).*

57. Over the past decade, in sum, the SRF has acquired the capabilities to back up its earlier designation as the premier component of the Soviet armed forces. It now has impressive capabilities for both intercontinental and peripheral strikes, and is pressing on with further efforts to acquire more powerful and survivable forces, although the total number of launchers is expected to decline slightly. Programs are now underway to convert about 900 launchers to new ICBM systems. About 170 launchers are now equipped with new missiles, most of these with MIRV warheads. As a result of this continuing program, the throw-weight of the Soviet ICBM force and the number of its independently targetable warheads are both increasing. Owing in part to these changes, but largely to the improved accuracies of the new systems, the Soviet ICBM force is acquiring an improved capability to destroy US Minuteman silos.

#### F. Air and Missile Defense Forces

58. The Soviets continue the emphasis on defense of the homeland that has characterized their military

TABLE VII  
SOVIET AIR AND MISSILE DEFENSE  
FORCES, MID-1970

Interceptors .....	2,545
MIG-25 Foxbat .....	225
MIG-23 Flogger .....	30
SU-15 Flagon .....	800 <sup>1</sup>
TU-128 Fiddler .....	160
YAK-28 Firebar .....	350
SU-9/11 Fishpot .....	700
MIG-19 Farmer .....	175
MIG-17 Fresco .....	105
Surface-to-Air Missile Launchers <sup>2</sup> .....	9,687
SA-1 .....	3,242
SA-2 .....	3,366
SA-3 .....	1,309
SA-5 .....	1,770
Anti-Ballistic Missiles .....	64

<sup>1</sup> In addition, as many as 50 more Flagons may be operationally deployed but not identified because of the use of hangarages.

<sup>2</sup> All systems have single launch rails except the SA-3 system, which has either two or four launch rails.

planning since World War II. They have been modernizing their air defenses, expanding their capabilities for early warning of a missile attack, conducting research and development on ABM and antisatellite systems, and continuing research on advanced technologies for defense. Current forces include limited ABM deployment and an antisatellite system in addition to some 2,600 interceptors and nearly 10,000 surface-to-air missile (SAM) launchers supported by some 1,150 early warning and ground controlled intercept (GCI) sites (see Table VII).<sup>3</sup> In addition the national air defense forces of the other members of the Warsaw Pact operate some 1,200 interceptors and 900 SAMs.

#### ABM Defenses

59. The ABM system deployed at Moscow would provide little defense against a massive US attack, but could protect the city and a fairly wide area of the Western USSR against a small-scale attack. The Soviets have not chosen to deploy the additional ABM

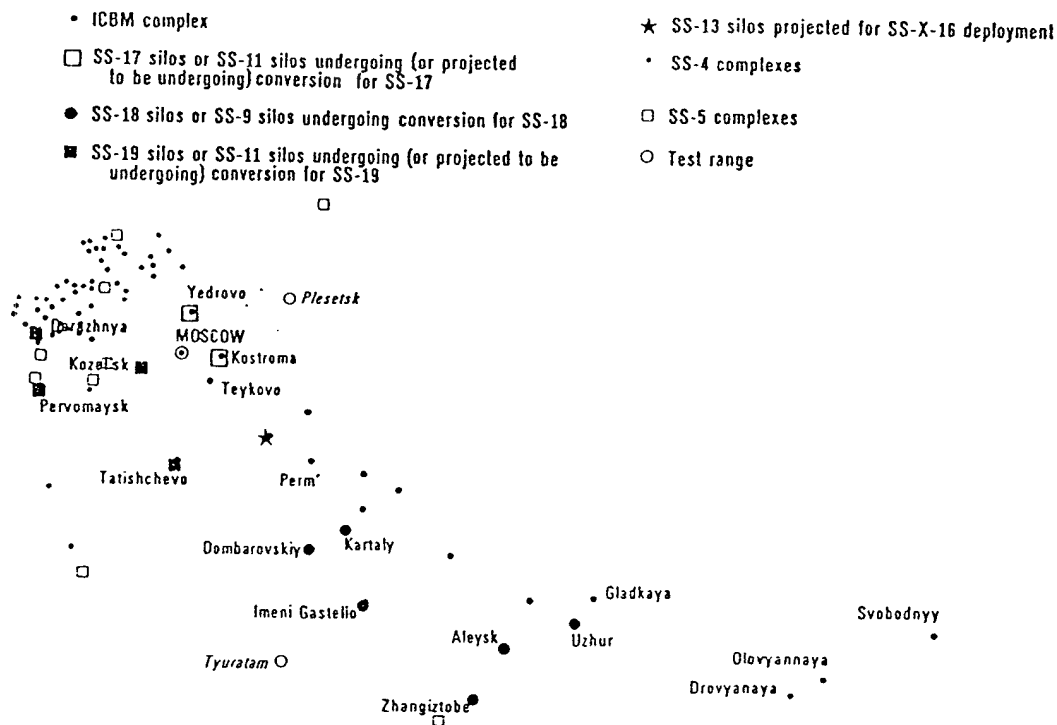
<sup>3</sup> These figures do not include tactical SAMs and fighters—see paragraphs 32 and 35.

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## Soviet ICBM & MRBM/IRBM Complexes, Mid-1976

Figure 15.



radars and interceptors allowed by the ABM treaty. They are aware of the limitations of conventional ABM techniques and the pace of ABM test firings has declined. Nevertheless they are continuing ABM R&D efforts. The Soviets also are improving their ballistic missile early warning capabilities by expanding the coverage provided by their radar network and by experimenting with satellite and over the horizon early warning systems (see Figure 16).

### Antisatellite Defenses

60. Since 1971 the Soviets have had an operational orbital interceptor system which can conduct non-nuclear engagements of satellites over the USSR at altitudes below about 2,500 nm, and they have recently improved the capabilities of this system (see paragraph 80). They also have a probable high-power laser system under development that could be used against low-altitude or possibly medium-altitude satellites.

### Air Defenses

61. The USSR has an extensive air defense system, but it has critical deficiencies which seriously limit its effectiveness against low-altitude penetrators (see Figure 17). Most of the currently deployed interceptors and SAMs were designed to counter the medium-to-high-altitude bomber and standoff missile threats which were evolving in the late 1950s and early 1960s. The continuing process of modernization of these forces has included the deployment of improved types of missiles and advanced fighters, the introduction of new data systems and other improvements in the command and control structure, and the deployment of nuclear warheads for some SAMs. The new Flogger interceptor now entering service has a limited capability to detect, track, and engage targets below its own altitude. On the whole, however, the current forces still have only limited capabilities against the low-altitude threat, and virtually no capability against high-performance ASMs like the short-range

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attack missile. Specific problems include deficiencies in the flow and correlation of radar tracking reports, poor quality GCI vectoring, and the lack of look-down-shoot-down capabilities in the interceptor forces.

#### G. Civil Defense Programs

62. As part of its general war survival strategy, the USSR has an ambitious civil defense program directed by the MOD and involving the key elements of the government and national economy. Soviet civil defense planning is focused on the development of a complementary program of shelter construction, urban evacuation, industrial protection, and the creation of both military and civilian units trained to restore vital services and essential production. Other elements of the Soviet program for war survival include economic mobilization plans, a strategic stockpiles system, and an indoctrination program for the general public.

63. Soviet publications give the impression of a comprehensive and dynamic civil defense program that could have a major impact on the ability of the USSR to survive a nuclear exchange. While the extent to which Soviet plans have been implemented remains uncertain, intelligence sources confirm the existence of substantial efforts in some areas, especially in protection for party and government officials. Recognizing the role of civil defense in ensuring successful operations by the armed forces in nuclear war, the Soviets made the civil defense structure wholly subordinate to the MOD in 1971, and measures are being taken to link civil defense more closely with the training and operations of the armed forces.

64. Plans for evacuation of the urban population received their greatest emphasis during the 1960s. More recently, the Soviets have modified to a degree their policy of mass evacuation of cities by placing somewhat greater emphasis on constructing shelters. This change has been reflected in the growth of construction of permanent shelter facilities to protect civilians in selected urban areas and at industrial complexes which would be subject to direct attack.

65. While we have evidence of the Soviets' efforts to carry out their plans to create a broadly based, military-controlled civil defense system, we are unable to determine the full extent of the progress they have made nationwide. Even with additional information

on the Soviet program, it will be difficult to measure accurately how well the system would function in nuclear war, and even more difficult to judge Soviet confidence in it.

### III. TRENDS IN WEAPON SYSTEMS

66. This section describes the basic characteristics of principal Soviet weapon systems and outlines the main trends in their development.

#### A. R&D Policy and Programs

67. The USSR has long accorded high priority to research and development on military weapons systems and related technologies, including space programs. The Soviets are well aware of the importance of basic scientific research and they support it generously. They also have devoted major resources to build up industrial technology in support of R&D goals for the military and in space. They have decreased, but not eliminated, their dependence on foreign technology in such key areas as instrumentation and computers.

68. The Soviets have attached increasing importance to closing the technological gap since the late 1960s. Recent Soviet statements reflect special attention to the impact of technological developments on the strategic military balance. The Soviets apparently believe that only the appearance of new types of weapons is likely to alter the existing strategic balance. They are concerned by the potential US developments in this area, and are themselves conducting R&D programs of broad scope and considerable vigor in fields where significant and perhaps novel weapon systems may emerge.

69. In their approach to weapons development, the Soviets have traditionally emphasized long-term evolutionary development of existing system concepts or narrowly focused efforts to develop specific types of systems. While some of their programs have involved innovative concepts and some of their deployed systems are technically advanced, they have tended to concentrate on programs that have a clearly defined near-term product.

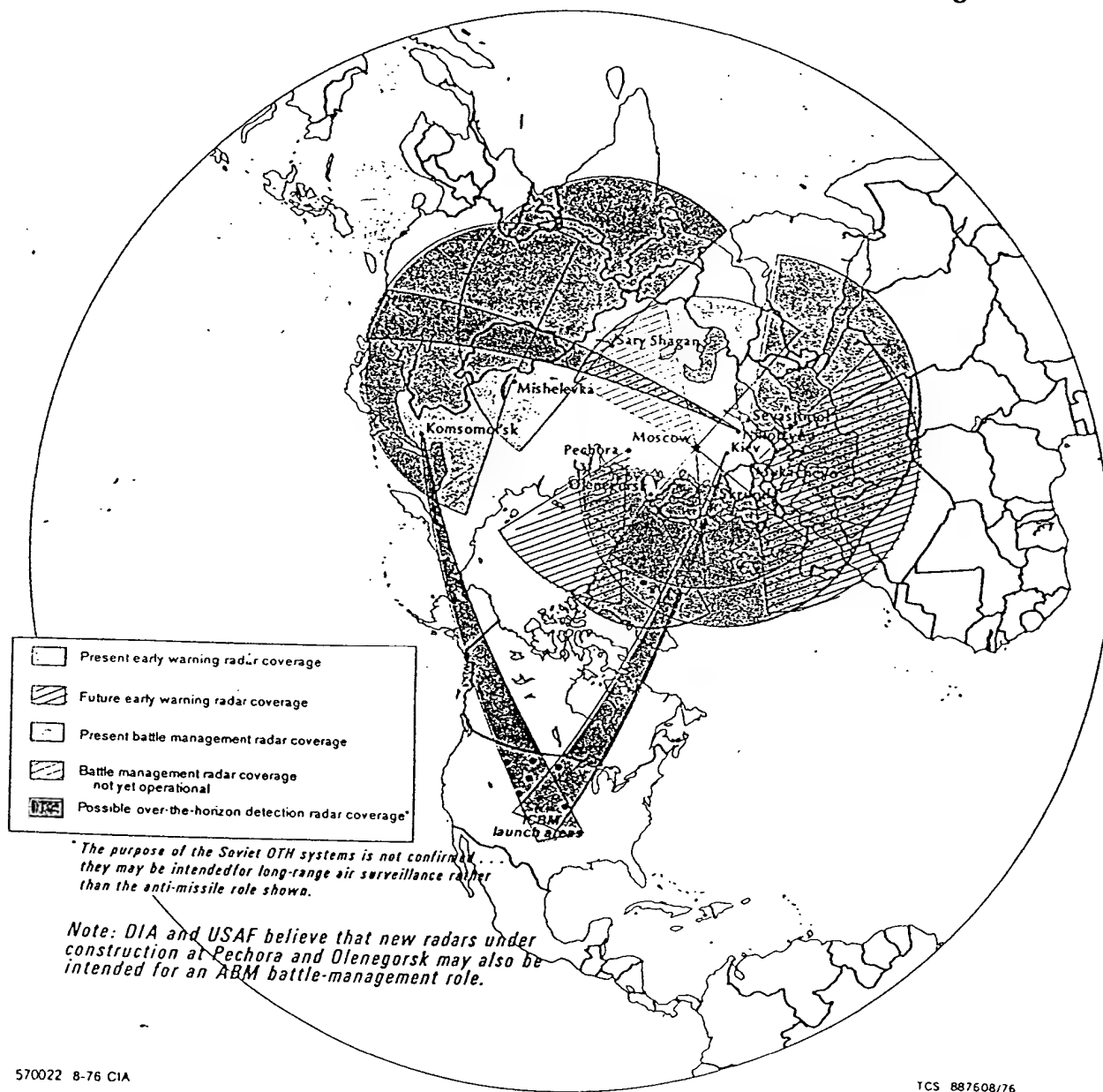
70. In recent years, however, the Soviets have evidently embarked on a broader range of exploratory military R&D programs. This would give the Soviets increased flexibility in future weapons development, a better base for the evolutionary development of

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**Soviet Ballistic Missile Early Warning and Acquisition Radar Coverage**

Figure 16.



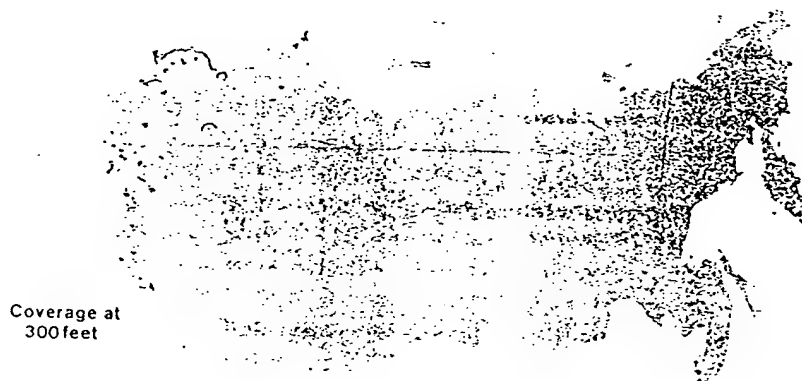
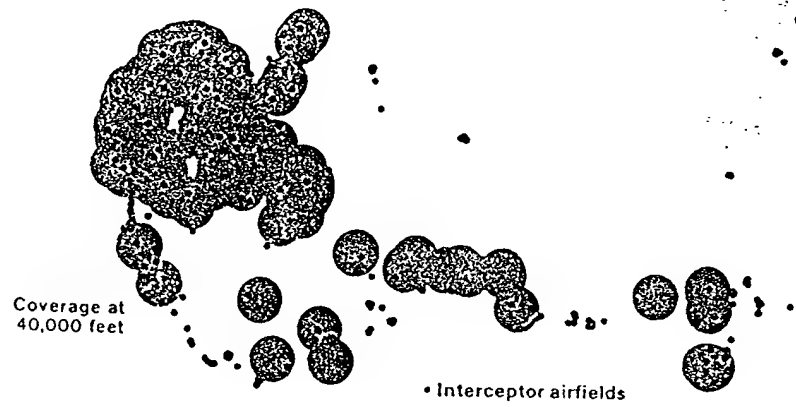


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# Current Strategic SAM Coverage and Interceptor Bases

Figure 17.



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existing systems, and a better basis for assessing perceived US threats.

71. Prime examples of Soviet interest in revolutionary technological concepts are in the areas of ASW sensors and directed-energy weapons. In both cases the Soviets have an extensive R&D effort in progress, even though the potential in terms of practical weapons development is uncertain. The ASW efforts involve investigation of a variety of techniques [

] Efforts possibly related to the development of directed-energy weapons include extensive basic research in areas that would support the development of charged-particle beam weapons, high-energy laser systems, and non-nuclear electromagnetic pulse generators. Some of the laser work is being done under sponsorship of the air defense forces, but the development of any of these systems for practical applications in the near term is considered unlikely. (*The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that the Intelligence Community is underestimating the impetus of Soviet directed-energy programs and that these programs could have a major, if not decisive, impact on the strategic balance before 1985.*)

72. This new trend toward exploratory R&D has been accompanied by continued efforts in the evolutionary development of existing systems. Major new weapon systems deployed during the past decade are shown in Figure 18, and systems currently under development are outlined in the following sections of this paper.

## B. Missile Systems

73. This section covers all major types of missile systems except ASW weapons and antitank weapons (see sections D and E below).

### Ballistic Missiles

74. Soviet ballistic missile programs are characterized by the evolutionary development of successive generations of new systems (see Figure 19). Both land-based and sea-based systems have followed a similar pattern, and new systems of both types are currently being tested.

75. Missiles deployed during the early 1960s had relatively poor accuracies, slow reaction times, and—for the most part—vulnerable launchers. Missiles introduced in the late 1960s, in contrast, were more accurate and provided substantial improvements in reliability and throw-weight capabilities. Pre-launch survivability also increased sharply, as large numbers of silo-based SS-9 and SS-11 ICBMs were deployed and the submerged-launch SS-N-6 SLBM entered service.

76. The 1970s saw further improvements in accuracy and throw-weight as the SS-17, SS-18, and SS-19 ICBMs were deployed and the navy received the long-range SS-N-8. MRV warheads also became available for some of the missiles deployed earlier, and the new land-based systems have a MIRV capability. In addition, the SS-17 and SS-18 ICBMs use a cold launch technique in which the missile is ejected from the silo before the motors ignite. This would permit the Soviets to refurbish and reload the silos more rapidly than for missiles using a hot launch technique. While the cold launch techniques could be used to support a refire capability, there is no evidence that the Soviets are now capable of rapidly refiring missiles from deployed SS-17 and SS-18 silos. *The Assistant Chief of Staff, Intelligence, Department of the Air Force, believes that, based on historical precedent and other factors, future deployment of resources to support the refire capability of the SS-17 and SS-18 should not be discounted.*

77. Another major ballistic missile introduced since the mid-1960s was the SS-12 (Scaleboard) 500-nm land-mobile system deployed in support of the ground forces. The Soviets also have developed and deployed a series of short-range missiles for battlefield support uses. The latest system of this nature—the SS-21 which has just begun deployment—probably has an inertial guidance system that makes it significantly more accurate than the earlier rockets (the FROG series) which were unguided.

78. Ongoing programs include work on the solid propellant SS-X-16 ICBM, which can be fired from silos or mobile launchers, and its derivative, the SS-X-20 mobile IRBM, which is about ready to enter service; the testing of variants of the SS-11, SS-17, SS-18, and SS-19; the testing of two new SLBMs, at least one of which has a MIRV payload; and the testing of a possible follow-on for the SS-12. In addition, there is evidence that other new systems

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Figure 18.

### Soviet Weapon Systems IOC's, 1965-76

This table shows major new systems that became operational during the period covered. It does not show subsequent modifications to these systems or systems introduced prior to 1965.

System		65	66	67	68	69	70	71	72	73	74	75	76*
Offensive Missiles	ICBM / SLBM / IRBM	SS-9	●										
		SS-11	●										
		SS-N-6			●								
		SS-13				●							
		SS-N-8								●			
		SS-18									●		
		SS-19									●		
		SS-17										●	
		SS-X-16											?
		SS-X-20											?
	SSCM	SS-N-7			●								
		SS-N-11			●								
		SS-N-9						●					
		SS-NX-12											●
	ASM	AS-5	●										
		AS-4			●								
		AS-6					●						
		AS-9											●
	ASW	SS-N-15			●								
		SS-N-14								●			
		SS-NX-16											●
	Other	SS-12 Scaleboard	●										
		Scud-B	●										
		Frog-7	●										
		SS-X-21											●
Air Defense	SAM	ZSU-23-4	●										
		SA-4			●								
		SA-5			●								
		SA-7			●								
		SA-9				●							
		SA-N-3			●								
		SA-6					●						
		SA-N-4						●					
		SA-8									●		
		SL-11 ASAT						●					
		ABM-1b Galosh				●							

\*Includes systems which are expected to become operational later this year.

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Figure 18.

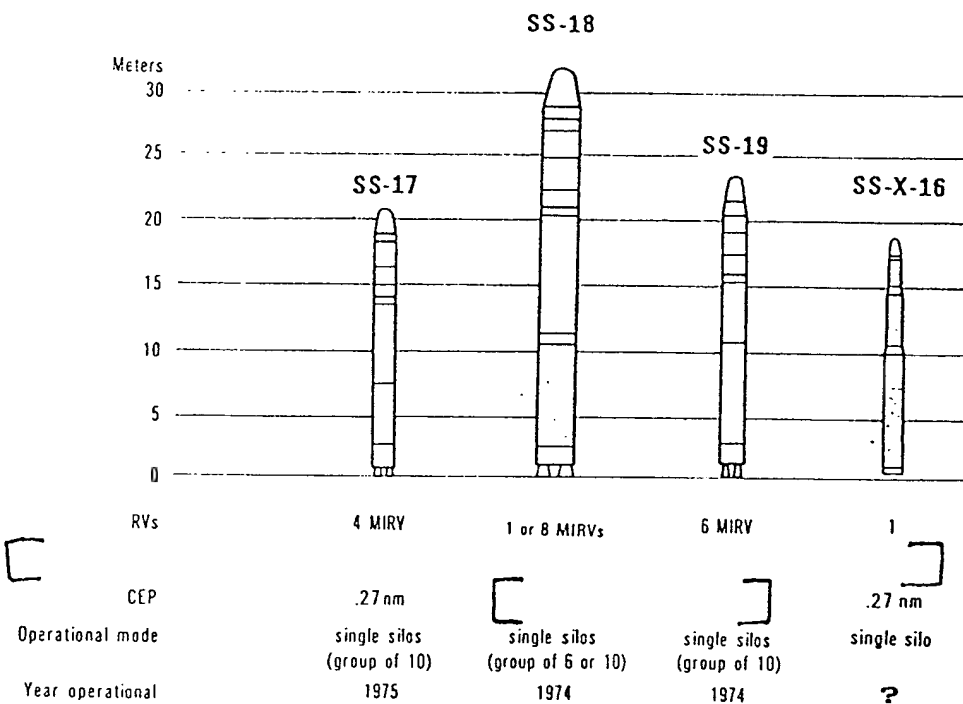
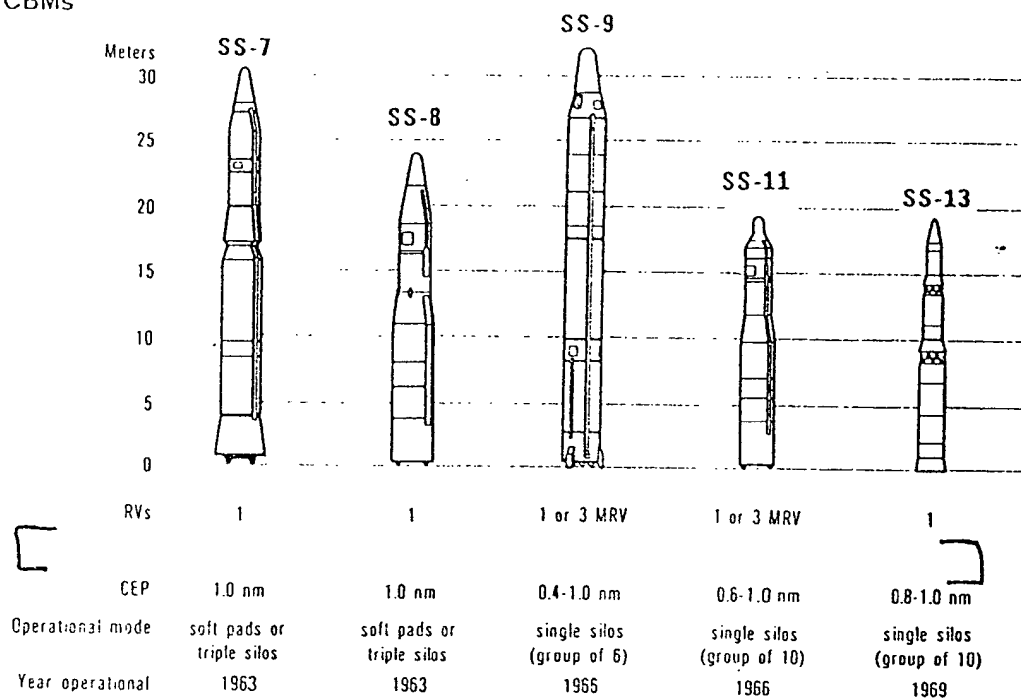
System		65	66	67	68	69	70	71	72	73	74	75	76*
Manned Aircraft	Fighters	TU-128 Fiddler		•									
		SU-15 Flagon			•								
		MIG-25 Foxbat					•						
		MIG-23 Flogger					•						
		SU-17/20 Fitter C							•				
		SU-19 Fencer									•		
		YAK-36 VSTOL											•
	ASW	BE-12 Mail		•									
		IL-38 May				•							
	Other	Backfire									•		
		AN-22 Cock			•								
		KA-25 Hormone			•								
		MI-24 Hind								•			
		IL-76 Candid									•		
Ground Forces	Armored Vehicles	Sagger ATGM	•										
		100mm ATG							•				
		152mm SPG								•			
		122mm SPG									•		
		BRDM-2		•									
		BMP			•								
		BMD					•						
		T-72									•		
	Ships	Moskva CHG			•								
		Kresta I CG			•								
		Kresta II CG				•							
		Krivak DD					•						
		Kara CG						•					
		Kiev CVSG											•
		Amphibious Ships		•							•		
Naval Forces	Submarines	V-I class SSN			•								
		C-I class SSGN			•								
		B class SS				•							
		P class SSGN					•						
		A class SSN							•				
		T class SS							•				

\*Includes systems which are expected to become operational later this year.

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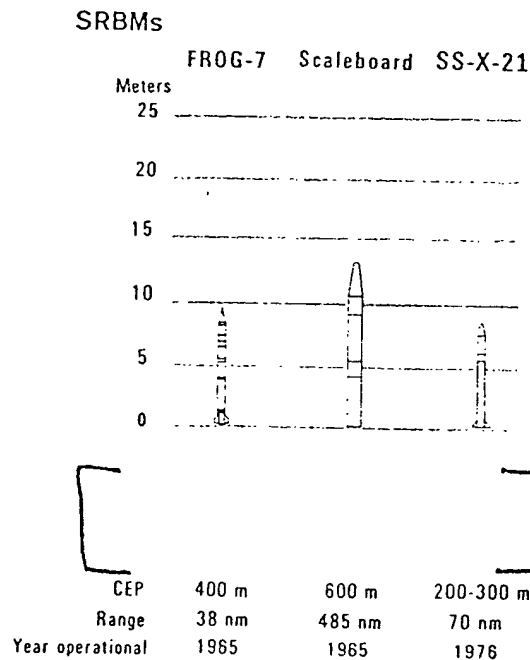
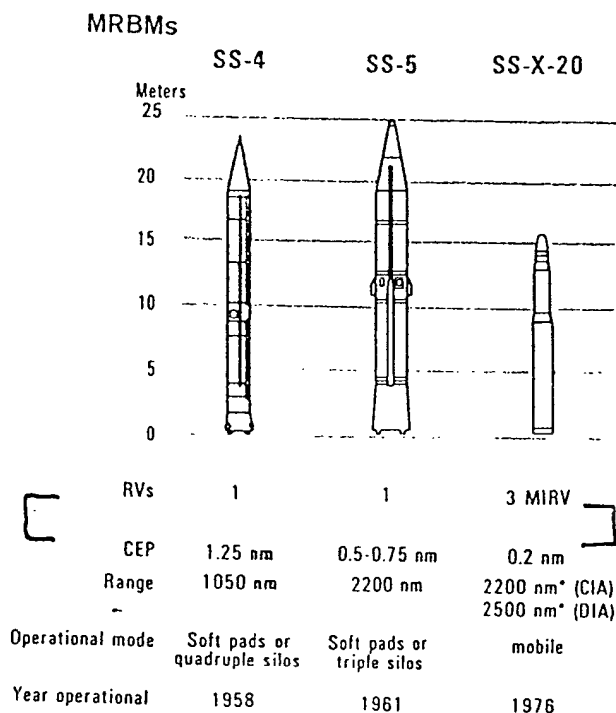
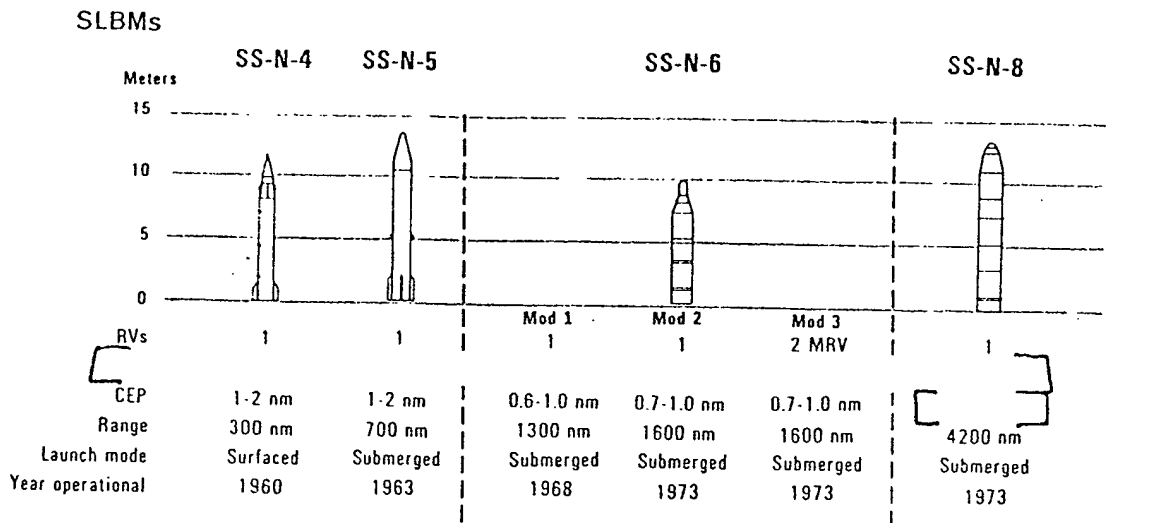
Figure 19.  
Soviet Ballistic Missile Characteristics  
ICBMs



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Figure 19.



\*The range of the SS-X-20 is being reassessed currently, but it is not believed that any change will affect deployment or the peripheral role of the system.

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are in an early stage of development. The Soviets also began development of a tactical antiship missile based on the SS-N-6 SLBM, but this system (the SS-NX-13) has not been tested since 1973 and probably has been abandoned.

#### ABM Systems

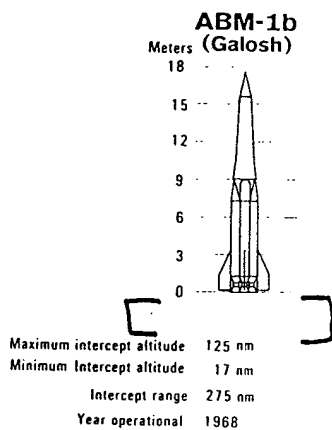
79. In addition to the limited deployment of the ABM-1b missile introduced in 1968 (see Figure 20), the Soviets tested a new ABM [ ] beginning in the early 1970s, but there has been a reduction in flight tests of these systems in the past two years. They have continued to work on ABM-associated radars, however, and there is evidence of work on an antitactical ballistic missile system. (The Assistant Chief of Staff, Intelligence, Department of the Air Force, also believes that the SA-5 surface-to-air missile could easily be modified to provide a terminal ABM defense capability.)

#### Antisatellite Systems

80. The Soviet antisatellite missile system which became operational in 1971 could intercept satellites in orbits below about 3,500 km (2,000 nm) during the second revolution of the interceptor. After a five-year lapse in flight tests, the Soviets resumed developmental tests of this system in 1976. In two tests this year

Figure 20.

#### Soviet ABM Characteristics



#### ABM Interceptor Test Firings

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they demonstrated a capability to destroy a low-altitude satellite on the interceptor's first revolution, which would substantially reduce warning time of an attack (see Figure 21).

#### Surface-to-Air Missiles

81. The Soviets have developed a wide array of SAMs and have made significant advances in this area. Originally concentrated on strategic systems for antibomber defenses, in recent years the Soviet effort has emphasized the development of tactical systems to defend ground and naval forces. There has been increased effort on the improvement of low-altitude performance, especially with the new tactical systems.

82. About 70 percent of the strategic SAMs currently deployed are of types which were designed in the 1950s, but all of the deployed systems have been modernized during their lifetime (see Figures 22 and 23). The Soviets also introduced one new strategic SAM, the long-range SA-5, in 1967, and a new low-altitude strategic SAM is under development. Recent evidence confirms previous indications that at least some SA-2 and SA-5 sites now have nuclear warheads; there were earlier indications that nuclear warheads might be available for some SA-1s.

83. Another significant recent development in SAMs has been the number and variety of systems provided for the ground forces (see Figure 24). First introduced in quantity in the late 1960s and early 1970s, these tactical missiles combine with modern anti-aircraft gun systems to form a mutually supportive and highly mobile air defense system for army units in the field.

84. A similar but less extensive deployment of new missiles (and guns) has improved the air defenses of naval surface forces (see Figure 25). SAMs have been fitted to all new major combatants and some smaller warships. Thus far, however, the navy has not received a long-range SAM that would provide good area defense capabilities.

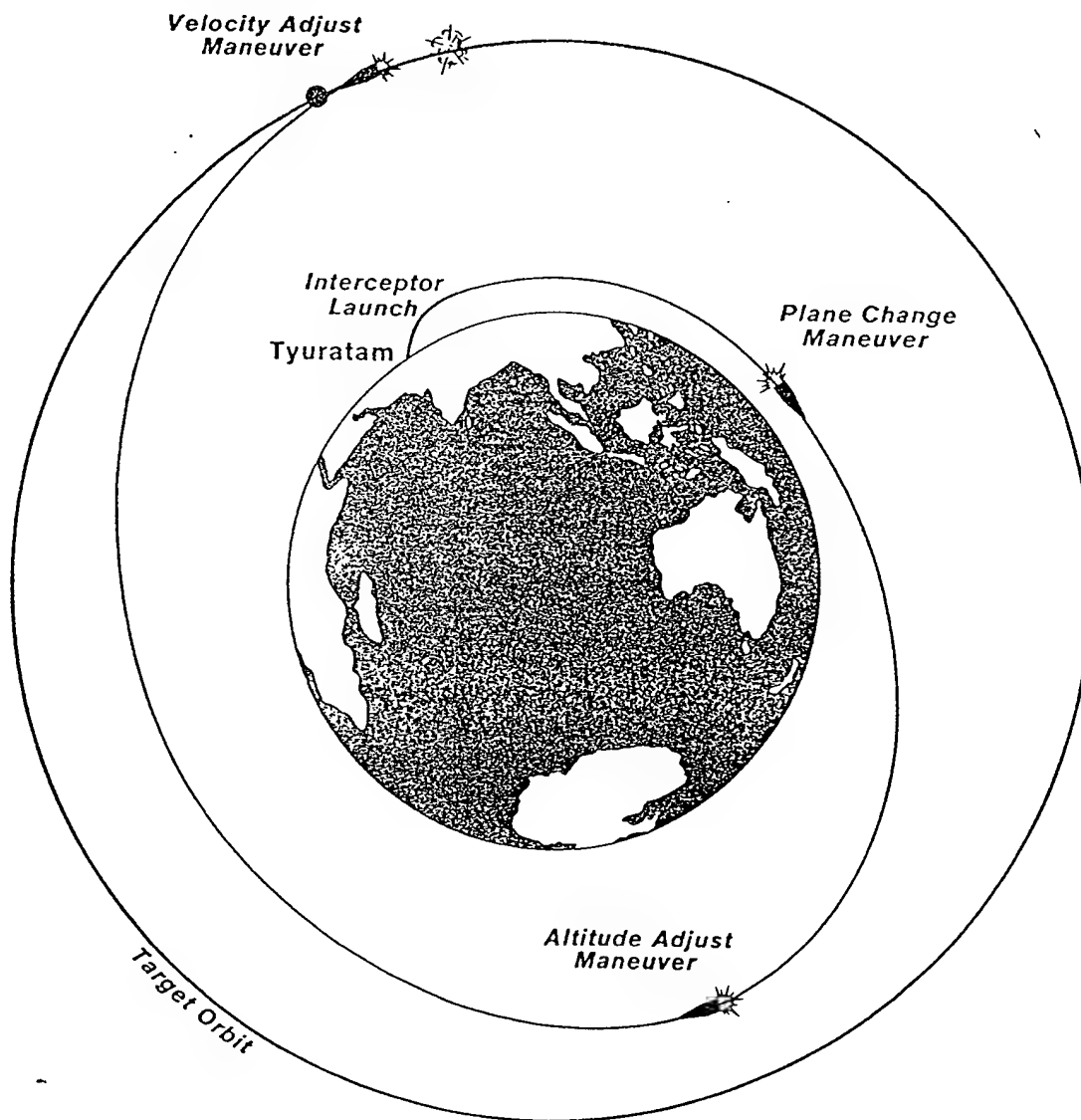
#### Cruise Missiles

85. The USSR took an early interest in the development of cruise missiles. Initially focused primarily on the antiship mission, the Soviets have deployed a variety of ASMs and surface-to-surface missiles (see Figures 26 and 27).

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Figure 21.

## Antisatellite Maneuver Sequence



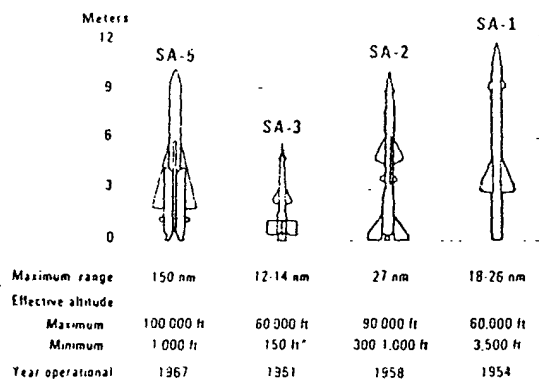
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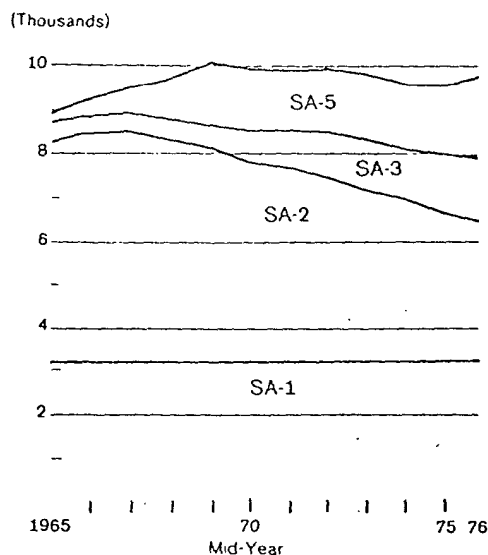
Figure 22.  
Currently Deployed Soviet Strategic SAMs



\*Some agencies believe that TV tracking and optimum conditions are required to achieve a 150 ft minimum altitude capability

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Figure 23.  
Growth in Soviet Strategic SAMs, 1965-76



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86. Developments in the ASM field include the deployment of AS-4, AS-5, and AS-6 missiles on LRA and naval aircraft. The ranges of these missiles vary from 120 to 300 nm and they can be armed with either high explosive or nuclear warheads.

87. Surface-to-surface cruise missile developments have been centered on the antiship role. Developments in antiship missiles include the introduction of the underwater-launched SS-N-7 in 1968, the SS-N-9 in 1971, and the SS-NX-12 in 1976.

88. The Soviets are not known to have any program comparable to US strategic cruise missile projects. They could develop a large long-range cruise missile with relatively poor accuracy, but we believe that the technology required for a small strategic cruise missile with high accuracy is not available to the Soviets at this time.

#### Tactical Air-to-Surface Missiles

89. The Soviets are active in the development of tactical ASMs. A command-guided version of the AS-7 short-range missile is believed to have become operational in 1975, as did the AS-9, the first Soviet antiradiation missile developed for tactical use. The first short-range missile with electro-optical guidance, the AS-X-10, is under development.

#### C. Manned Aircraft Systems

90. The Soviets have maintained a steady program of evolutionary development of most types of manned aircraft. The new aircraft introduced since the mid-1960s have been increasingly sophisticated, and some of the latest types are roughly comparable in speed, range, maneuverability, and payload to Western types deployed several years earlier. They are still inferior, however, to the new generation of aircraft now being introduced in the West.

91. The most impressive developments have been in the area of strike-oriented combat aircraft, with the introduction of such advanced types as the Backfire bomber and the Fitter C, Flogger, and Fencer (see Figures 28 and 29). These developments have substantially upgraded the offensive potential of Soviet airpower. Improvements in defensive capabilities have been less impressive, but included the development of the Flagon and interceptor variants of the Foxbat and the Flogger. In addition, the YAK-36 V/STOL aircraft for the navy marks a new departure in Soviet fighter development.

92. Transport aircraft types have followed a pattern of steady improvement with the introduction of such aircraft as the IL-76 heavy jet transport following earlier turboprop-powered types (see Figure 30). However, the Soviets are still behind the US in heavy, long-distance lift capability.

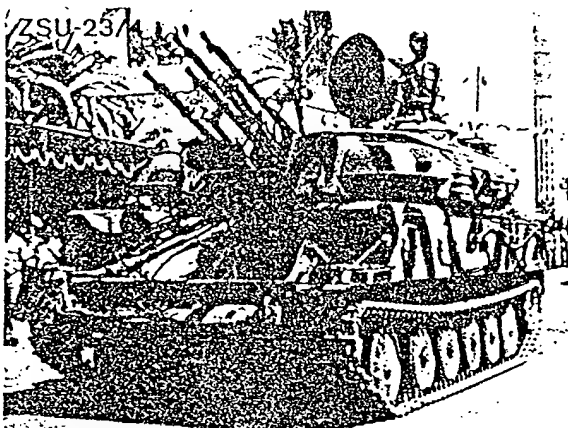
93. Noteworthy developments in other areas include the introduction of modern fixed-wing ASW aircraft during the late 1960s and early 1970s, although there

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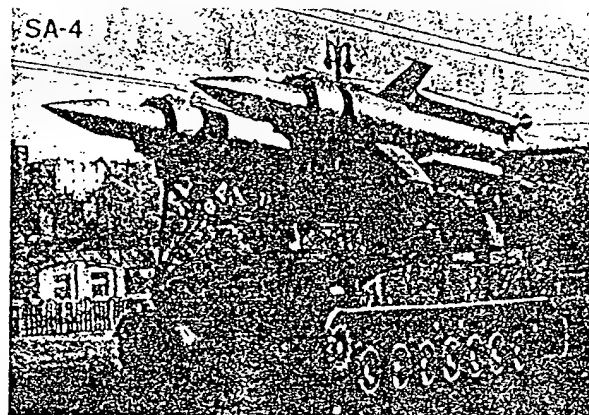
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## New Tactical Air Defense Weapons

Figure 24.

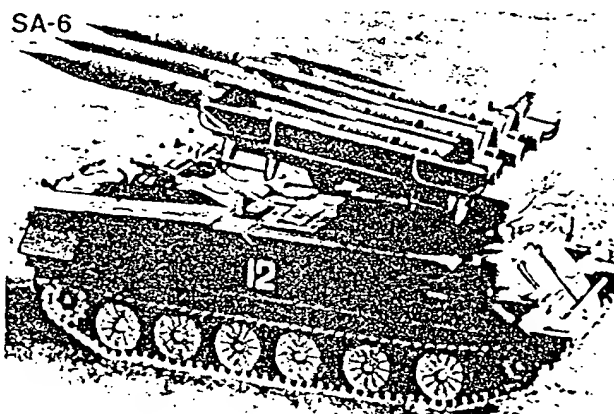
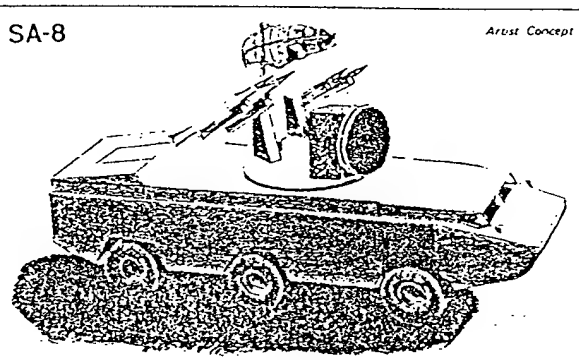


The ZSU-23/4 employs a target tracking radar in conjunction with its quad-mounted 23mm guns. It was introduced in Soviet regiments in the late 1960s for improved low-altitude protection from tactical aircraft and helicopters.



The SA-4 is a mobile, medium-to-high altitude surface-to-air missile system which entered service in the late 1960s. It has been assigned at army and Front level to replace the SA-2.

The SA-8 is a new mobile amphibious SAM system which is just entering service. It is expected to offer air defense coverage below SA-6 coverage and beyond the range of the SA-9. It is being introduced in some divisions as an alternative to the SA-6.



The SA-6 is a mobile, low-to-medium altitude surface-to-air missile system introduced in the early 1970s. It is replacing 57mm anti-aircraft guns at the division level.

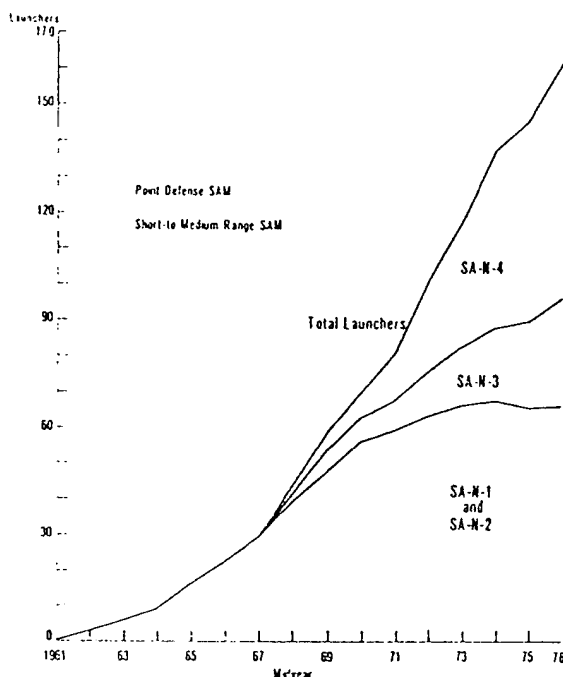


The SA-9 consists of an amphibious BRDM-2 scout vehicle modified to carry small SAMs—similar to the SA-7. Introduced in the late 1960s, it operates in conjunction with the ZSU-23/4 to provide low-altitude protection for regiments.

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Growth of Surface-to-Air Missiles on Soviet Warships

Figure 25



SP-203, 6-74 CIA

are no known current programs of this nature (see Figure 31). The Soviets also have deployed new ASW helicopters, and they have followed the US lead in deploying a helicopter-gunship for ground force support (see Figure 32).

94. At least two new fighters are currently being tested. The Soviets have alluded to a follow-on long-range bomber project, but we have no firm information on such a program.

#### D. Naval Systems

95. Soviet progress in naval weapons systems has been marked by a willingness to adopt novel concepts within an overall pattern of evolutionary development. Backed by a strong program of basic research in marine technology, the result has been an impressive advance in the quality of naval weapons systems since the mid-1960s.

##### Surface Combatants

96. Recent Soviet shipbuilding programs have produced a series of modern and versatile warships (see Figure 33). Major types currently under construc-

tion include the Kiev-class carrier, the Kara- and Kresta II-class cruisers, and the Krivak-class destroyer. All of these units feature an emphasis on ASW and air defense systems. The introduction of the Kiev class adds another dimension to Soviet naval power—that of the V/STOL aircraft. Newly constructed surface ships continue to reflect a long-standing Soviet stress on heavy initial firepower, with less concern for endurance and sustained combat capability.

97. The Soviets have begun significant although as yet limited programs for the construction of modern naval auxiliaries to provide at-sea support for their combat forces. Currently, however, they still use inefficient replenishment methods which make their ships vulnerable during refueling operations. The Soviets—and the Poles and East Germans—also have produced a number of new but relatively small amphibious landing ships since the mid-1960s, and the Soviets have continued to introduce new designs for the modernization of their large coastal and minesweeping forces.

##### Submarines

98. The strategic attack capability of the navy was significantly improved by the introduction of the Y-class SSBN in 1968 (see Figure 34). The subsequent introduction of the D-classes marked further advances in this field. There are indications that an even larger SSBN may be under development.

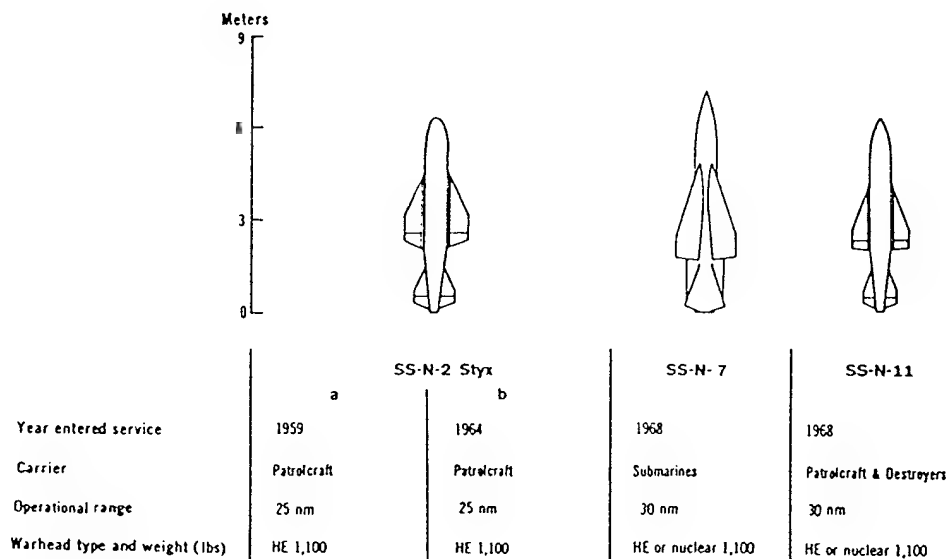
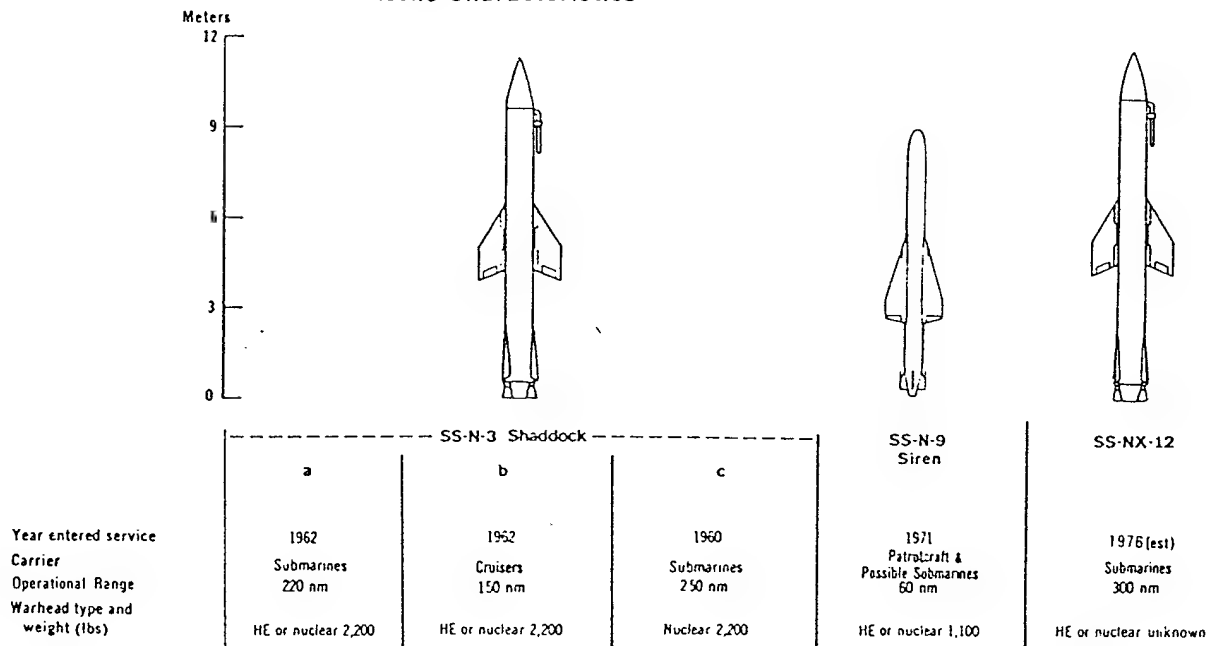
99. Three types of nuclear-powered attack submarines are under construction (see Figure 35). Two of these—the V-II and C-II—are variants of designs that became operational in the late 1960s. The third—the A class—was first launched in 1969 and the program appears to have suffered engineering and production setbacks, but is now proceeding. The A class probably represents the most advanced Soviet effort in this field, and it appears to be designed as a small, high-speed, deep-diving submarine with improved ASW capabilities. The Soviets also continue to produce a diesel-powered attack submarine, the T class.

100. Instead of passive sonar capability and platform quieting, the Soviets have emphasized active sonar and speed in their submarine designs. The relatively high self-noise of Soviet nuclear-powered submarines continues to be a serious handicap, as it increases their vulnerability to acoustic detection

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Figure 26.

### Naval Cruise Missile Characteristics

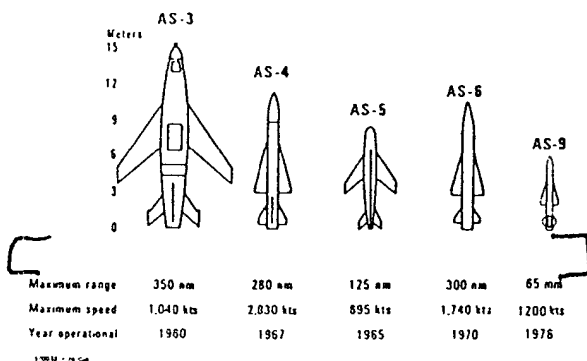


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#### Soviet Air-to-Surface Missile Characteristics

Figure 27.



systems and reduces the effectiveness of their own sensors (see Figure 36).

#### ASW Weaponry

101. In addition to efforts toward improved sonar and other ASW sensors, three advanced ASW weapons appeared during the early 1970s. One is a ship-launched missile with a homing torpedo, and the other two are submarine-launched missiles—one with a torpedo and one with a nuclear depth bomb payload (see Figure 37).

#### Advanced Vehicles

102. The Soviets have devoted considerable attention to the development of surface-effect ships and other advanced concepts with applications to a variety of naval missions. Several different experimental systems have been tested, including one exceptionally large vehicle that has been under development since at least 1967 (see Figure 38). The Soviets also have an active air cushion vehicle (ACV) program, and some ACVs already have entered naval service.

### E. Land Combat Systems

103. Weapon systems for the use of the Soviet army have become increasingly complex since the mid-1960s and have been produced in quantity. As in the case of tactical fighters (section C above), the old image of relatively simple and unsophisticated armaments is no longer appropriate (see Figure 39).

#### Tanks

104. In 1974, some 13 years after the initial deployment of the T-62 and after extensive develop-

mental efforts, the Soviets began series production of a new medium tank, the T-72. It has recently been identified with Soviet units in the USSR. Production of the new tank is expected to increase markedly in the next year or two, allowing the Soviets to deploy the T-72 widely. A complete and reliable technical description of the new tank is not yet available, but it probably is faster and better armed than present Soviet tanks. It is likely that it has a 115 mm or larger smooth-bore gun, and improved fire control, cross-country mobility, and armor.

#### Armored Combat Vehicles

105. The BMP amphibious armored infantry combat vehicle was first seen in the late 1960s and began to appear in substantial numbers during the early 1970s. It is an especially versatile vehicle, superior to operational Western counterparts. The BMP and the BTR-60 APC are replacing older model APCs, and the Soviets have developed a follow-on to the BTR-60 series. The Soviets also are producing a new airborne assault vehicle, the BMD, which significantly improves the antitank and ground mobility capabilities of the airborne forces.

#### Artillery

106. In 1974, new 122-mm and 152-mm self-propelled guns were first identified in the Soviet forces (see Figure 40). These weapons have superior cross-country mobility and provide greater protection for their crews than do towed cannons. They also are especially well suited for supporting fast-moving armored attacks. Limited evidence suggests that a third new self-propelled gun may be under development.

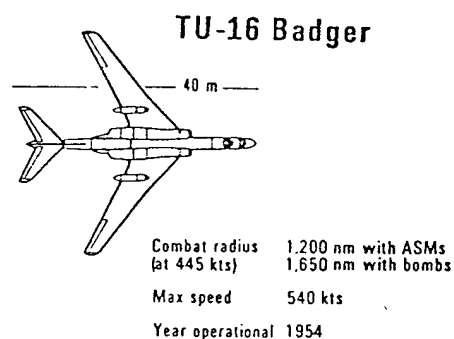
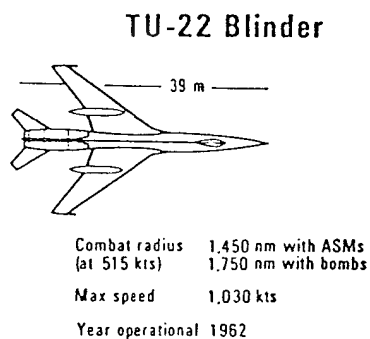
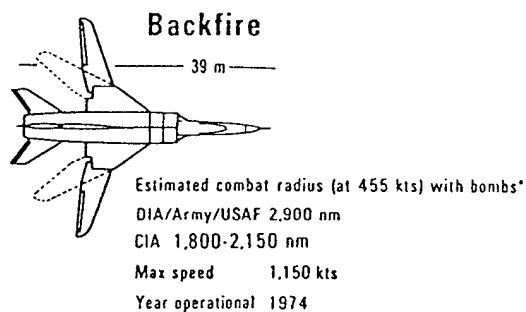
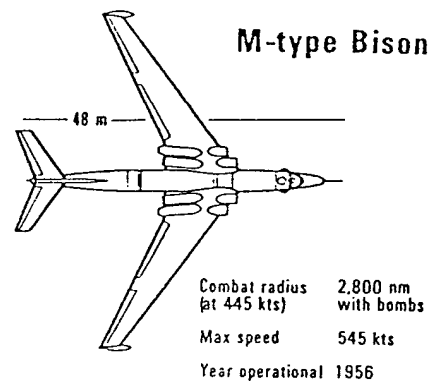
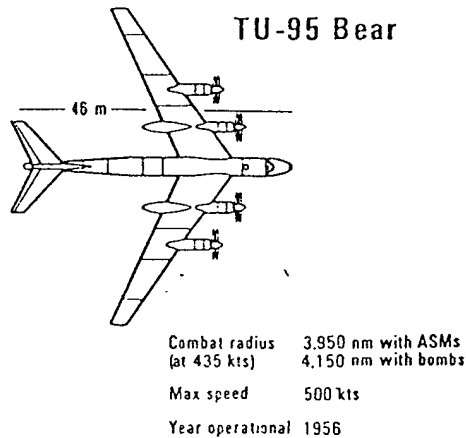
107. Recently acquired evidence suggests that the Soviets either have deployed nuclear artillery rounds or expect to deploy them soon. Other artillery developments include the reappearance of old model heavy artillery pieces—203-mm howitzers and 240-mm mortars. Evidence also indicates that the Soviets are now producing proximity fuses, which will make Soviet artillery considerably more effective against light armored vehicles and troops without overhead cover.<sup>4</sup>

<sup>4</sup> See paragraph 77 for comments on ballistic missile systems deployed in support of the ground forces.

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## Soviet Long-Range & Intermediate-Range Bombers

Figure 28.



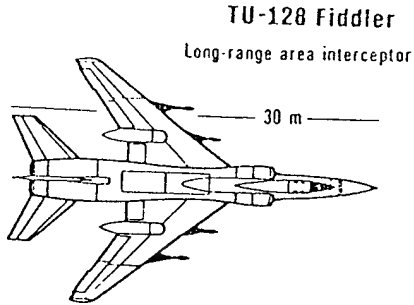
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\*See paragraph 45 for a discussion  
of Backfire performance estimates.

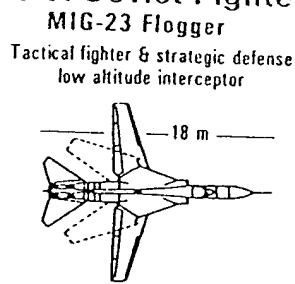
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# Representative Characteristics of Soviet Fighters\*

Figure 29.

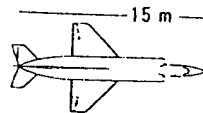


Speed 950 kts  
Radius 810 nm  
Armament 4 AAMs  
Year operational 1966



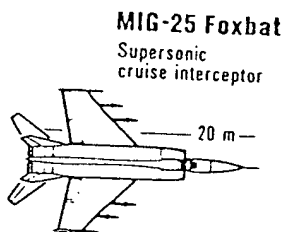
Speed 1,320 kts  
Radius 615 nm  
Armament 4-AAMs or 5-500 kg bombs  
Year operational 1970

**YAK-36**  
Vertical or short take-off and landing fighter

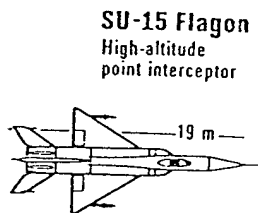


Speed 670 kts  
Radius \*\* 235 nm  
Armament 2-500 kg bombs  
Year operational 1976

\*\*Assumes short take-off role



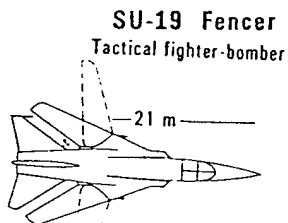
Speed 1,600 kts (sustained)  
Radius 300 nm  
Armament 4 AAMs  
Year operational 1970



Speed 1,320 kts  
Radius 370 nm  
Armament 2 AAMs  
Year operational 1967

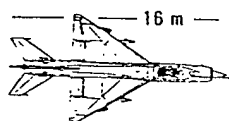


Speed 1,080 kts  
Radius 540 nm  
Armament 2 or 4 AAMs  
Year operational 1964

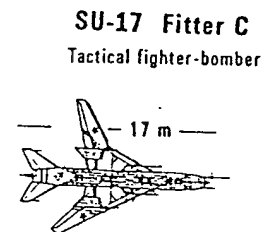


Speed 1,435 kts  
Radius 1,005 nm  
Armament 8-500 kg bombs or 4 ASMs  
Year operational 1974

**MIG-21 Fishbed J/K/L**  
All-weather tactical fighter



Speed 1,260 kts  
Radius 270 nm  
Armament 4-250 kg bombs  
Year operational 1969



Speed 1,150 kts  
Radius 520 nm  
Armament 4-500 kg bombs  
Year operational 1972

\* These figures represent maximum performance characteristics, all of which are not simultaneously attainable

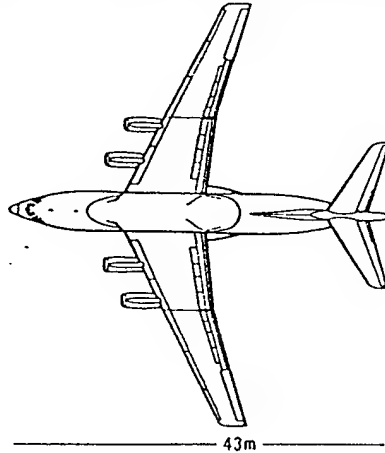
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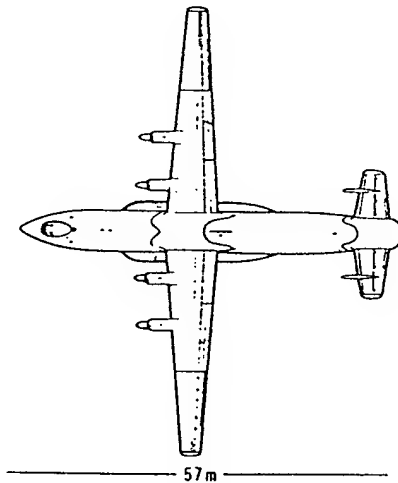
## Soviet Military Transport Aircraft Characteristics

Figure 30.



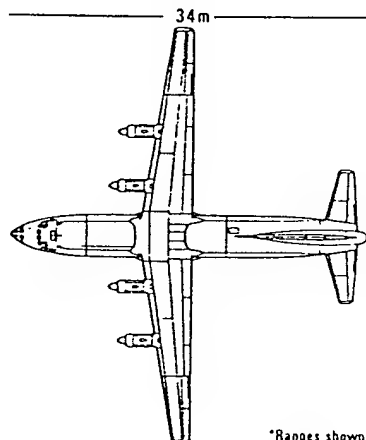
### IL-76 CANDID

Range:	2,860 nm *
Payload:	39,900 kgs
Average speed:	415 kts
Year operational:	1974



### AN-22 COCK

Range:	2,250 nm *
Payload:	79,800 kgs
Average speed:	355 kts
Year operational:	1967



### AN-12 CUB

Range:	750 nm *
Payload:	19,900 kgs
Average speed:	320 kts
Year operational:	1959

(data applies to late models; early versions have considerably reduced range)

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\*Ranges shown are calculated using maximum payload.

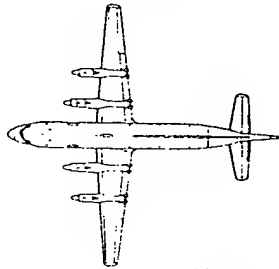


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Figure 31.

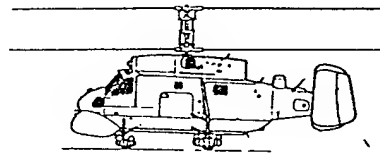
### Soviet ASW Aircraft Characteristics

IL-38 MAY



Speed: 320 kts  
Radius: 1,350 nm  
Payload: 3,400 kg  
Year operational: 1968

KA-25 HORMONE



Payload: 898 kg  
Range: 240 nm  
Year operational: 1967

### Soviet Helicopter Characteristics

Figure 32.

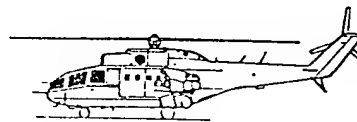
MI-8 HIP



Payload: 24 men/3,175 kg  
Range: 55 nm  
Year operational: 1964

*Medium-lift transport*

MI-24 HIND



Payload: 10 men/1,678 kg  
Range: 290 nm  
Year operational: 1973

*All-weather combat assault helicopter*

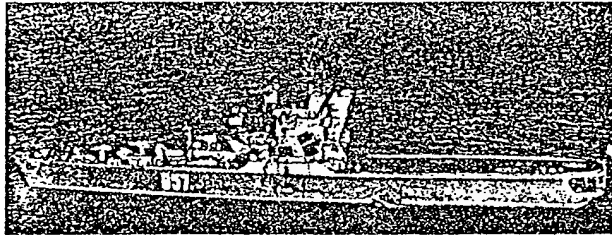
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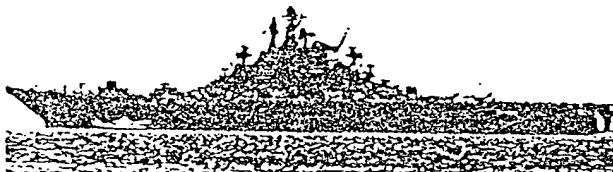
Figure 33.

## Major Soviet Surface Combatants



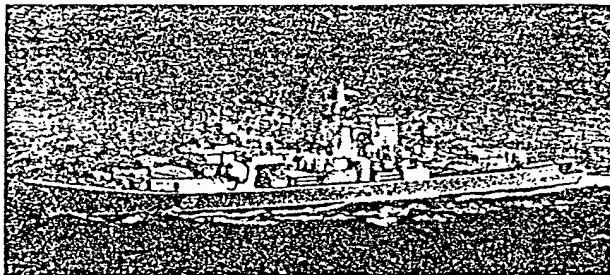
### Moskva Helicopter Cruiser

The Moskva class represents the first Soviet venture into aircraft carriers. The Soviets call the Moskva an antisubmarine cruiser.



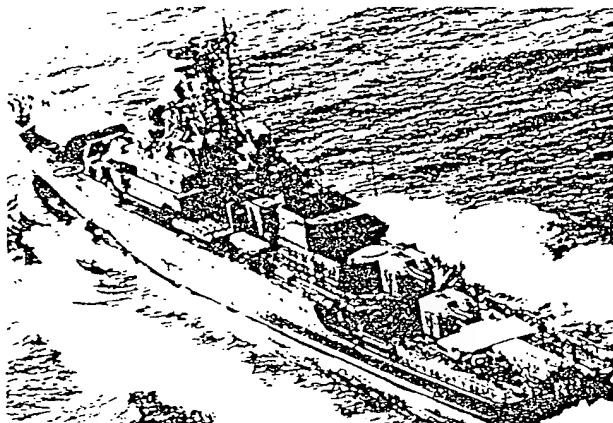
### Kiev Aircraft Carrier

The Kiev class guided missile ASW aircraft carrier represents the second stage of Soviet aircraft carrier development. The Soviets refer to the Kiev as an antisubmarine cruiser.



### Kara Missile Cruiser

The Kara class is the follow-on to the Kresta II class cruiser. The Soviets refer to the Kara as a large antisubmarine ship.



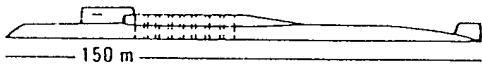
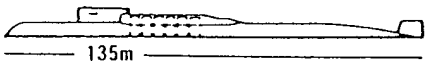
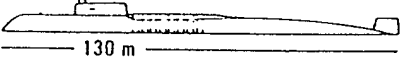

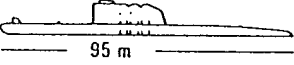
### Krivak Destroyer

The Krivak class is expected to be the Soviets' largest surface ship construction program since 1950.

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## Soviet Ballistic Missile Submarines

Figure 34.

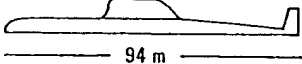
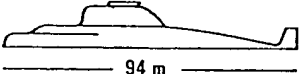
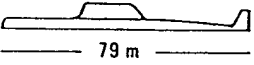
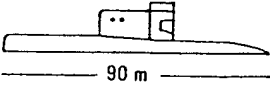
		Year Operational	Propulsion	Missile	
D-II-class	 150 m	1975	nuclear	16 SS-N-8	(4,200 nm)
D-I-class	 135m	1973	nuclear	12 SS-N-8	(4,200 nm)
Y-class	 130 m	1968	nuclear	16 SS-N-6	(1,300-1,600 nm)
H-II-class*	 115 m	1963	nuclear	3 SS-N-5	(700 nm)
G-II-class	 95 m	1966	diesel	3 SS-N-5	(700 nm)

\*One H-class was converted to test the 4,200 nm SS-N-8 missile. It carries six launch tubes.

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## Recent Soviet General Purpose Submarines

Figure 35.

		Year Operational	Propulsion	Weapons
C-II-class	 94 m	1974	Nuclear	8 SS-N-7 and Torpedoes
V-II-class	 94 m	1973	Nuclear	Torpedoes
A-class	 79 m	1972	Nuclear	Torpedoes
T-class	 90 m	1972	Diesel	Torpedoes

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#### *Antitank Missiles*

108. The Soviets have continued to develop new types of antitank missiles and are deploying them in large numbers. These include systems mounted as an integral part of the armament of some combat vehicles as well as man-portable and helicopter-launched missiles. Follow-on antitank systems with improved guidance and increased range are expected to enter service in the near future.

#### *Air Defense Systems*

109. Comments on the significant improvements in ground force air defense systems appear in paragraphs 32 and 83.

#### *F. Space Systems*

110. From its inception the Soviet space program has had a military orientation and the majority of space vehicles have had military missions. Operational systems introduced since the mid-1960s have included

a succession of photographic and Elint reconnaissance satellites, and there has been a growing use of communications satellites in the last few years. Since the early 1970s the Soviets also have introduced radar and Elint satellite systems that can provide general coverage of surface ship activity in selected ocean areas, and in some cases limited targeting data can be provided directly to naval units armed with antiship missiles. The Soviets also appear to have begun testing a satellite system with the capability to provide early warning of ballistic missile launches. In addition, the ongoing development of the Soviet manned space program is believed to be oriented toward military applications (see Figure 41). (Antisatellite systems are covered in paragraph 80.)

#### *G. Electronic Systems*

111. During the past decade the Soviets have improved the quality of their military applications of electronics systems. Although still well behind the US in such important areas as integrated circuits and

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computer technology, they have nevertheless made substantial advances in a number of areas of military significance.

112. The Soviets have long been strong advocates of electronic warfare, in both the offensive and defensive aspects. There is good evidence that a considerable variety of new electronic countermeasures (ECM) and counter-countermeasures (ECCM) equipment has been introduced in recent years.

- The ground forces have large numbers of mobile jammers, with the equipment required to jam all of NATO's communications in addition to aircraft navigation and bombing systems, and possibly their terrain-avoidance radars.
- The air forces have over 250 dedicated ECM support aircraft to be used as standoff and escort jammers against early warning and fire control radars and associated communications; bombers and an increasing number of fighters have ECM equipment for self-protection.
- The naval forces also have a large quantity of ECM equipment, especially on their newer major surface combatants.

113. In a related area, the past decade also has seen a proliferation of more secure and survivable communications systems, and the Soviets have recently begun

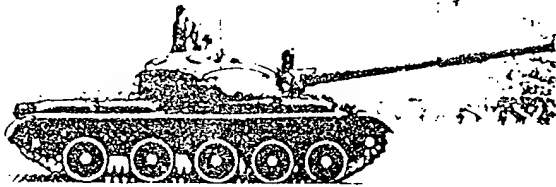
to introduce encrypted telemetry in some missile R&D programs. The Soviets also have made steady but not spectacular progress in the development of active and passive sonar systems, and underwater communications systems. Other significant advances in the electronics area are reflected in the introduction of more sophisticated navigation and fire control systems for the new tactical aircraft. The Soviets also have a strong program in electro-optics, with applications to night vision devices, SAM guidance, "smart bombs," TV target acquisition, and airborne laser rangefinders.

#### H. Chemical/Biological Weapons

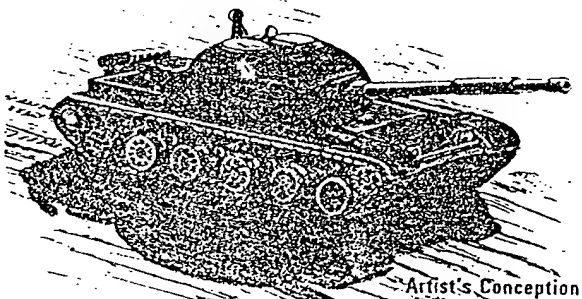
114. The Soviets have a variety of systems capable of delivering lethal and incapacitating chemical agents. We believe that they possess substantial stocks of toxic chemical agents, but the amount cannot be estimated with any confidence. There is good evidence that toxic chemical munitions are available to the Soviet forces in Eastern Europe.

115. The Soviet forces could operate much more effectively in a chemical-biological-radiological (CBR) environment than could NATO forces. The Soviets have developed CBR defensive organizations with specialized units down to the regimental level for technical reconnaissance and decontamination. The training of these units includes the use of toxic agents

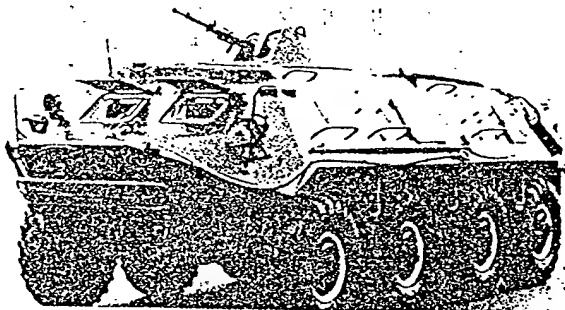
Figure 39.  
Soviet Armored Fighting Vehicles



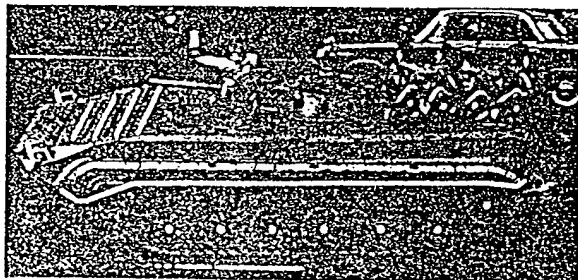
T-62 medium tank with 115mm smoothbore gun.



Soviet T-72 Medium Tank with 115mm (or higher) smoothbore gun.



BTR 60PB amphibious armored personnel carrier.



The BMP amphibious combat vehicle has a three-man crew and is armed with a 73mm smoothbore, short-recoil gun with automatic loader, a Sagger ATGM launcher, and a machine gun. The eight-man infantry squad is provided with individual firing ports and CBR protection.

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at CBR sites. The Soviets have excellent CBR equipment, and newer models of ground forces equipment such as APCs and perhaps new tanks and some trucks are equipped with advanced filtration and protective systems. Similarly, most new Soviet warships are equipped to operate in a CBR environment, as are some aircraft. The Soviets also have deployed in quantity decontamination and chemical reconnaissance equipment of types not possessed by Western forces.

116. All the Warsaw Pact countries have signed the international agreement prohibiting the development, production, storage, and use of biological weapons. There is good evidence that, in the past, the Soviets conducted extensive research on biological agents and protective techniques and they have facilities that could be used to make biological agents. Soviet exercises and available documentary writings, however, have not reflected offensive use of biological weapons.

#### IV. MISSIONS AND OPERATIONS

117. This section discusses the operations and interactions of the individual components of the Soviet armed forces in the accomplishment of various peacetime and wartime missions. It attempts to present an overview of the manner in which the specific functions of various forces would fit into an overall strategy. In doing so, it focuses on the Soviets' perceptions of how their forces should be employed—as indicated by doctrinal writings, exercise activities, deployment patterns, and systems characteristics—in addition to assessments of current Soviet capabilities to perform specific tasks.

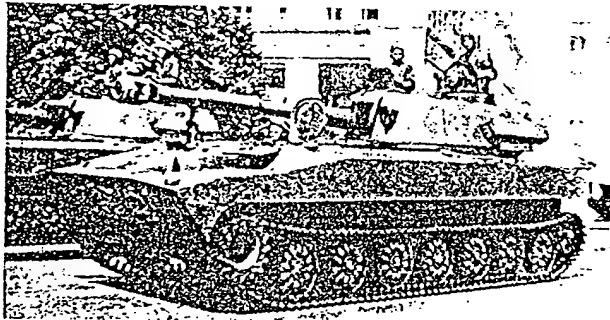
118. The presentation of this material is necessarily somewhat assertive, due to the summary nature of this paper. This should not be taken as an indication that the basic patterns outlined are immutable. On the contrary, there are areas in which the Soviets themselves seem uncertain, or prepared for a variety of contingencies, and our information on Soviet intentions and capabilities is uneven. Major areas of uncertainty or divergent opinion within the Intelligence Community are noted in text, and more detailed discussions of the evidence and alternative assessments are contained in the basic NIEs on these forces.

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### Soviet Self-Propelled Artillery

122 mm SP Gun



152 mm SP Gun

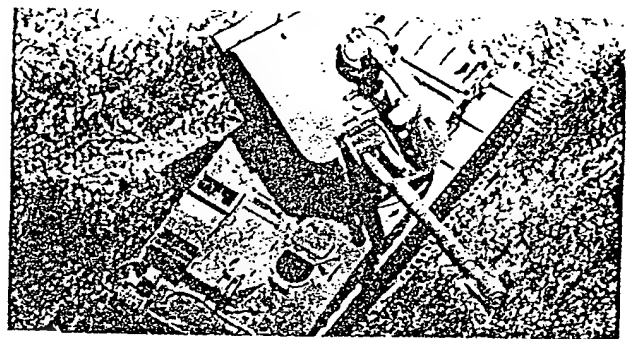
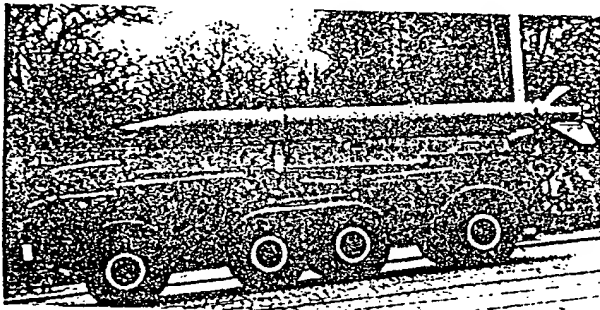


Figure 40.

The amphibious 122mm and the 152mm self-propelled artillery pieces were developed in the late 1960s, probably to help Pact artillery units keep pace with rapidly advancing armored units. They also provide greater protection for their crews in both conventional and nuclear environments.

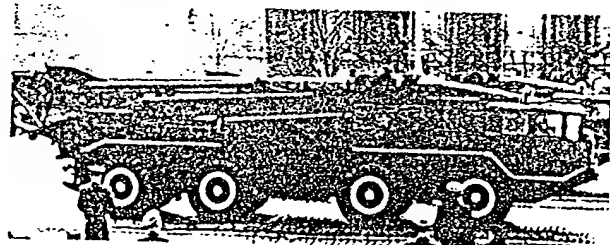
FROG-7

### Tactical Surface-to-Surface Missiles



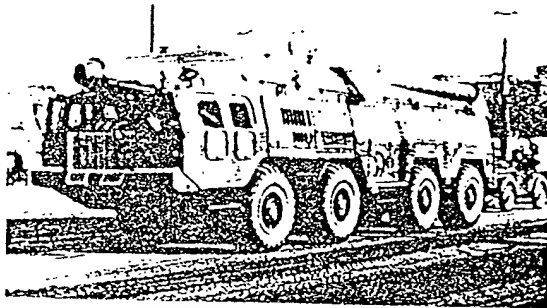
The FROG-7 is an evolutionary improvement of earlier versions of this system. Its maximum range is 38 nm and it can carry a conventional, chemical, or a nuclear warhead.

Scud-B



The Scud-B with its wheeled launcher is an evolutionary improvement of earlier versions of this system. Its maximum range is 160 nm and it can carry a conventional, chemical, or nuclear warhead.

Scaleboard



The Scaleboard is a mobile long-range guided missile system on a MAZ-543 launcher. Its range is 490 nm and it carries a nuclear warhead.



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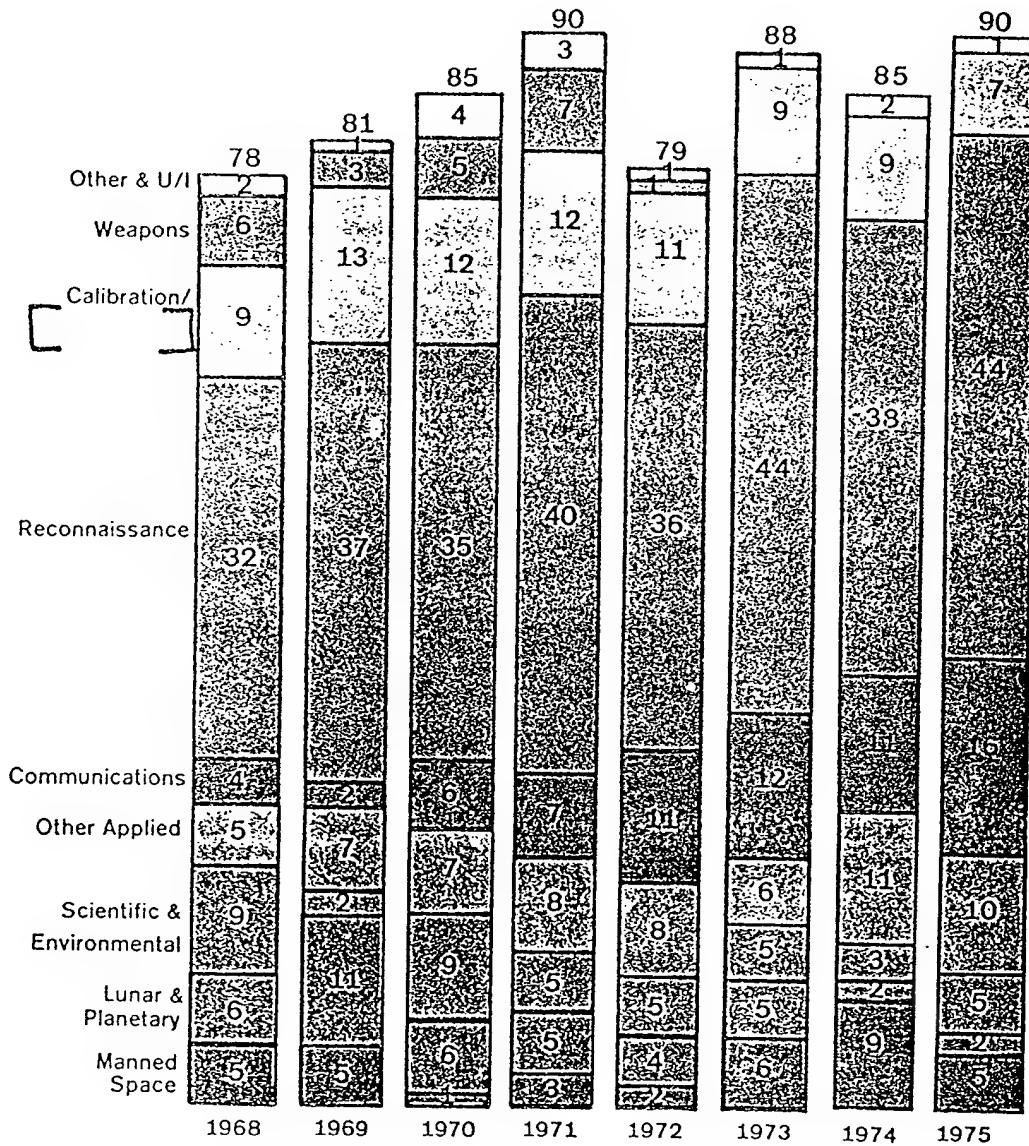


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Figure 41.

# Trends in Soviet Space Launches 1968-1975

(Launches Per Year)



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### A. Peacetime Operations

119. The routine peacetime operations of most elements of the Soviet forces are directed primarily toward training for combat missions, of course, but the Soviet navy has acquired active peacetime missions as well. The extension of Soviet military aid to Third World countries also has become an increasingly significant factor in Soviet foreign policy initiatives in recent years.

#### *Naval Operations*

120. Operations outside of home waters by Soviet naval forces expanded rapidly in the last half of the 1960s and stabilized at a higher level in the early 1970s (see Figure 42). This buildup, in part, reflects an extension of the area of operations into the eastern Mediterranean and the North Atlantic. In addition, expanded naval operations in more distant areas are a direct manifestation of the Soviet navy's growing role as an instrument of state policy. The Soviet navy has, in this way, been used to advance foreign policy objectives, including the establishment of a naval presence in response to international crises.

121. In the North Atlantic, Norwegian Sea, Mediterranean and Pacific, Soviet naval activity is concentrated primarily on training for operations against Western navies. The Mediterranean naval presence also supports Soviet interests in the Arab world, however, and gives the Soviet navy an image of equality with US naval forces. In the Indian Ocean, the Caribbean, and West African waters, naval activities are essentially political in nature, although ships and submarines also are deployed periodically to provide a counterbalance to Western naval deployments.

122. Political use of the Soviet navy involves "showing the flag" visits to promote good will and a favorable image of the USSR, particularly in the Third World countries that generally favor the USSR. Soviet naval forces also have been used in low risk situations in support of sympathetic governments. For example, in the spring of 1970 the Soviets made prolonged port calls at Mogadiscio, Somalia, to demonstrate support for the local government which was in danger of being overthrown. On two occasions, the Soviets have used demonstrations of naval power in concert with diplomacy to obtain the release of detained crews of their merchant and fishing vessels.

123. The USSR also has positioned its naval units in crisis areas in an attempt to discourage Western naval initiatives in such situations as the Arab-Israeli wars of 1967 and 1973, the Jordanian crisis in 1970, and the Indo-Pakistani war of 1971. The augmentation of Soviet naval forces off West Africa during the Angolan war probably was intended to inhibit South African or US naval initiatives in the area. In so using its forces, the Soviet leadership apparently seeks to deter the US from action by putting the burden of the next move and possible escalation on the Western forces. In the crises to date, the operations of Soviet naval forces have been carefully monitored and directly controlled from Moscow, suggesting that the Soviets appreciate the risks involved.

124. Operations in distant areas have been accompanied by the development of overseas facilities in some areas to support Soviet naval activities. A series of naval support facilities, including a cruise missile handling and storage site, have been built in Somalia. The development of extensive naval facilities also was under way in Egypt before the Soviet expulsion, and less elaborate facilities were begun in Cuba in 1970. The Soviet navy also has established communications stations in Cuba and Somalia, and periodically deploys reconnaissance or ASW aircraft to Cuba, Guinea, and Somalia.

#### *Military Aid*

125. Military aid programs have developed as a major tool of Soviet foreign policy interests during the past decade, after less successful earlier efforts. These programs often involve the presence of a sizable Soviet military assistance group in the recipient country and are closely linked to Soviet political objectives in the area. In addition to providing opportunities for extending Soviet influence, these programs have diminished Western influence in some areas.

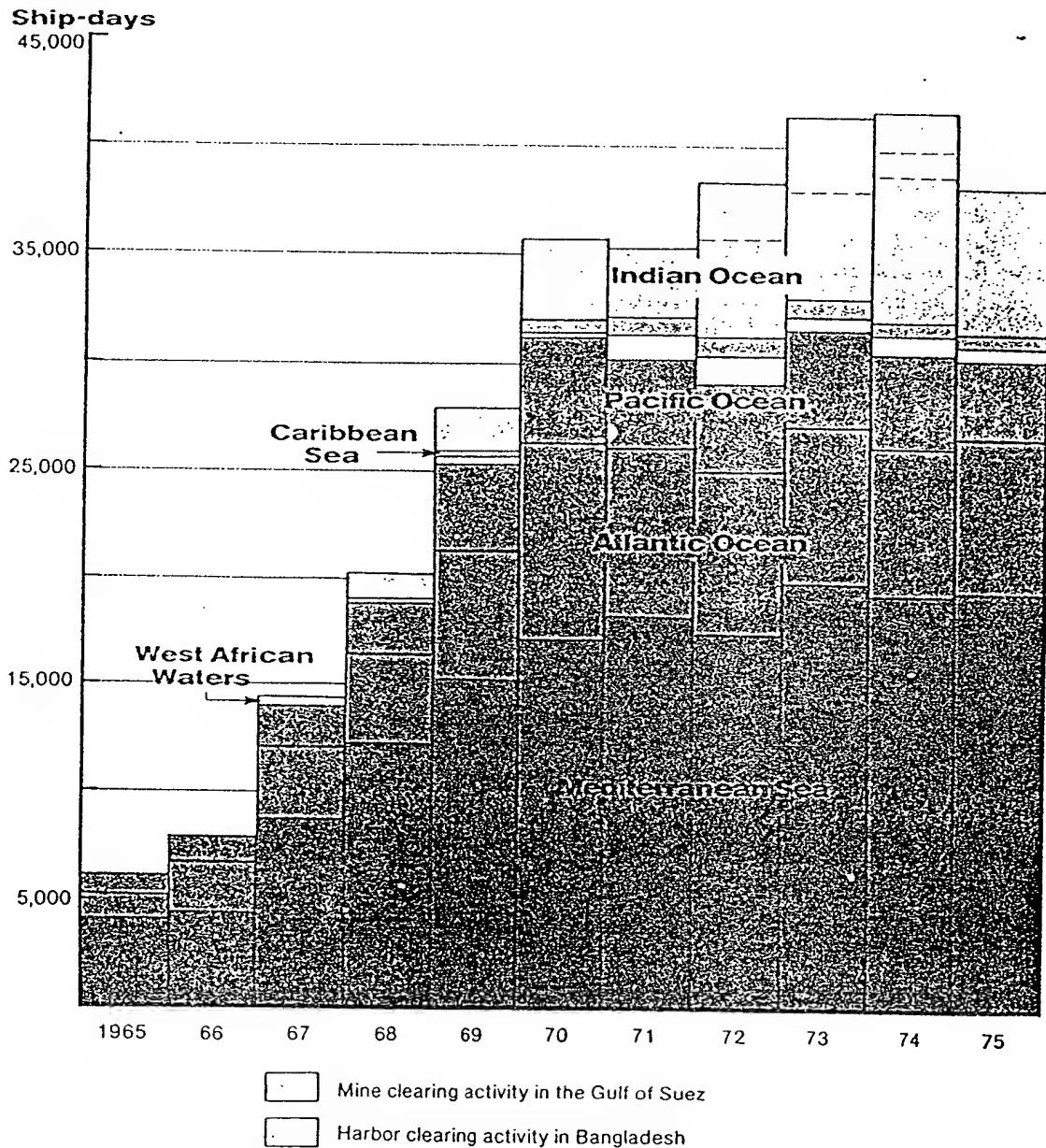
126. Military aid activity increased substantially in the early 1970s, with a concentration in the Middle Eastern Arab nations. This expanded effort has been accompanied by a trend toward the provision of more modern weapon systems, which generally require more technical advisers.

127. The Soviets have had setbacks as well as successes in their military aid activities, and there is evidence of some opposition to the expenditure of resources on these programs. Despite such disappoint-

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Figure 42.

# Operations of Soviet General Purpose Naval Forces Outside Home Waters, 1965-75\*



570046 6-76 CIA \*Excludes activities of ballistic missile submarines and oceanographic and space support ships.

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ments as the Egyptian experience, however, the Soviets continue an opportunistic approach to the use of military aid to further their own interests.

#### B. Distant Interventions

128. The Soviets have developed a growing capability for military intervention in Third World conflicts, in those situations in which a local power has invited them. In the past decade they also seem to have shown less constraint about such involvements. They have only limited capabilities, however, for intervention in the face of significant opposition.

129. The most common form of Soviet intervention has been the provision of logistics support—transportation and materiel—for local forces. Operations of this nature have included the large-scale efforts to resupply Arab forces after the 1967 and 1973 wars and the support provided to the Cuban expeditionary forces in Angola. The long-term support for North Vietnamese forces also falls in this category. In some cases, Soviet airlift capabilities have played a significant role in critical situations.

130. The most substantial direct commitment of Soviet combat forces in a Third World conflict in recent years was the deployment of SAM and fighter forces to Egypt in 1970. The Soviets were careful not to provoke combat, but their presence had a significant impact on local developments. The deployment of the forces to Egypt was unopposed militarily, although there were some casualties from Israeli air activity while the forces were there.

131. In the absence of significant opposition the Soviets also could introduce elements of their airborne forces and tactical air forces to assist their clients in some situations. Using all its aircraft VTA could deliver one airborne division, or possibly the assault elements of two, to a distance of about 1,300 nautical miles in one day after the forces had been alerted and assembled. Some of the newer Soviet fighters, moreover, have sufficient range to reach the Middle East on non-stop flights. Such operations would be constrained, however, by the problem of obtaining overflight rights and providing the requisite ground facilities and logistics support. These problems would be compounded as the distance from the USSR increased, as would the difficulty of maintaining adequate command and control.

132. Given the time to marshal their merchant shipping assets, the Soviets could sealift large forces over considerable distances, if unopposed. Most of the ships best suited for such an operation are normally at sea, however, and the Soviets are not well prepared to undertake this kind of operation on short notice.

133. Soviet capabilities to intervene in distant areas against significant military or naval opposition are limited. The amphibious lift and assault capability of the Soviet navy is neither large enough nor composed of the ships necessary to support a substantial intervention ashore against opposition. The USSR has no ships for helicopter assault or for air cover during a distant amphibious assault, and the Soviets would be hard pressed to maintain sea control in most parts of the world. The Kiev-class aircraft carrier has some potential for air cover, but we do not believe that it was constructed for this purpose, nor would it represent great capability. Past Soviet interventions on behalf of clients have not encountered direct military opposition. The Soviets probably do not see the need for, nor do they seem to be building, forces for intervention in distant areas against substantial opposition. Rather, they appear to place greater stress upon using their military and naval forces to discourage other powers from intervening.

#### C. War With China

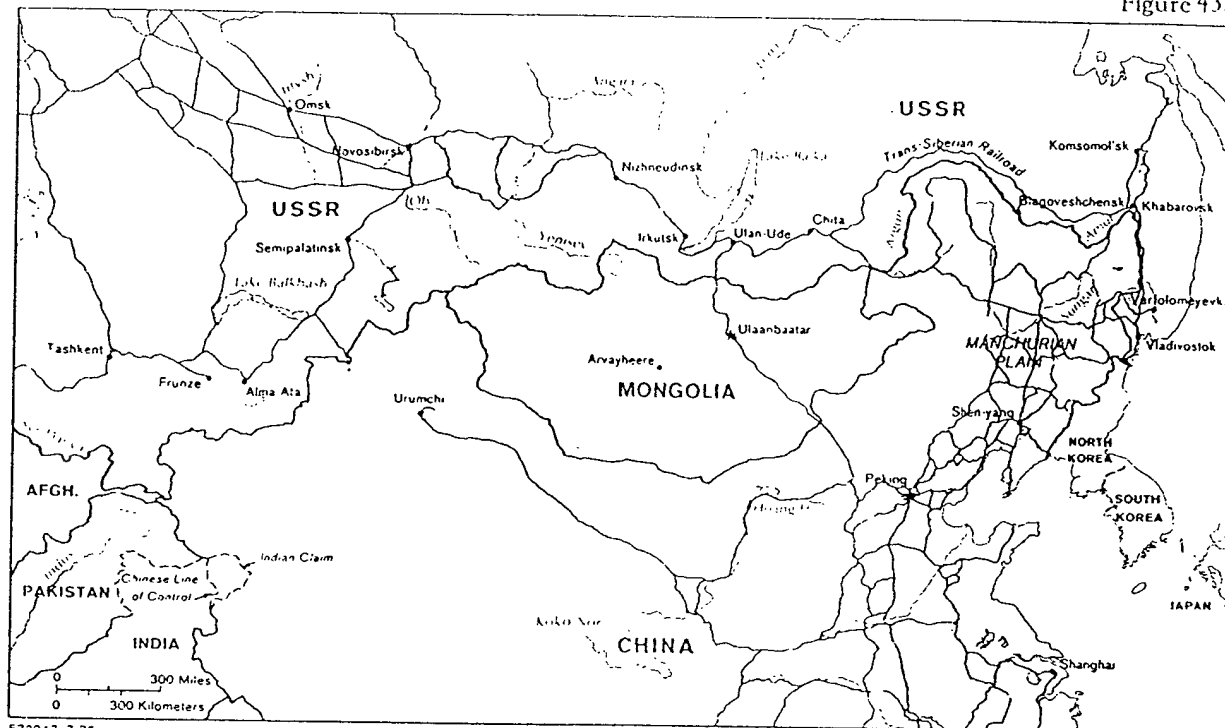
134. The buildup of Soviet forces along the Chinese border in the late 1960s and early 1970s reflected Soviet preparations for a variety of contingencies in the face of a potential threat. From the Soviet point of view a rather large buildup has been required simply to provide for the physical integrity of the lengthy frontier—over 10,880-km (6,800 miles), including the 4,240-km (2,650-mile) Sino-Mongolian sector. More importantly, the narrowness of the band of habitable Soviet territory along the frontier and the proximity of vital Trans-Siberian Railroad to the Manchurian border both required that the buildup be concentrated in areas close to the border, so that the Soviets could stop a Chinese attack and push Chinese forces back before the railroad could be cut (see Figure 43).

135. [ ] the basic posture of the forces is defensive. [ ]

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# Sino-Soviet Theater

Figure 43.



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136. Various motivations are conceivable for major Soviet military actions against China, but considering the risks such a step would involve, only a direct threat to the security of Soviet territory would seem likely to trigger such a move. In the highly improbable event that border skirmishes continued after local Soviet actions, the Soviets could move across the border in considerable strength. Limited objective military operations in Manchuria and Sinkiang could be undertaken to exert pressure on the Chinese leadership. Deeper penetrations, involving mobilization of additional Soviet forces, seem unlikely due to the risks of protracted war. Moscow might perceive an opportunity for such action, however, in the contingency of a China sharply divided by an internal struggle for power. In this case, the Soviets might intervene with the aim of supporting or imposing a faction more favorably disposed to cooperation with the USSR, or of establishing a puppet regime in one or more of the border regions.

137. In any conflict with China the Soviets would be especially concerned about the spectre of a two-front war, with the fear that a heavy Soviet engagement in China would lead to aggressive moves by NATO. Conversely, barring a radical improvement in Sino-Soviet relations, the Soviets probably would feel compelled to maintain strong forces along the border even during a NATO-Warsaw Pact conflict.

## D. War in Europe

138. Soviet concepts of the nature of a war in Europe have changed in the past decade, and the Soviets now expect that a NATO-Warsaw Pact conflict probably would begin with both sides using only non-nuclear weapons.

The Soviets' planning is based on the belief that they could quickly contain a non-nuclear NATO attack, go on the offensive, and achieve early successes in penetrating NATO's defenses. Thus, the Soviets probably would continue to use only non-nuclear weapons as long as possible, although they believe NATO would eventually have to use nuclear weapons to halt the Pact offensive.

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- The Soviet capability for a rapidly advancing offensive would depend heavily on tank forces. If the Soviets were ever forced to conclude that their tanks were unable to penetrate NATO defenses, they would have to rethink their strategy and contemplate radical redesign of their forces.

139. Another significant change in the Soviets' theater war concepts is that they now consider it likely that Pact operations—including major offensives—would begin prior to the large-scale reinforcement they intend to conduct with ground forces from the USSR. Until about the mid-1960s, the Soviets expected to conduct such a reinforcement in advance of war. This change [

] may have occurred because the Soviets no longer count on having the time for prior reinforcement, and also because of the danger that such action could be counterproductive. For example, it might cause NATO to begin a buildup of its own that would work against the Pact's initial numerical superiority of forces in Central Europe. The Soviets may also believe that the reinforcement process is not as severely threatened by NATO nuclear attack as it was in earlier years. This change in doctrine does not necessarily represent a change in Soviet preferences, but may reflect a prudent planning assumption.

140. *The Director of the Bureau of Intelligence and Research, Department of State, takes a different view* [

- He believes [ ] a Soviet concept of a worst case rather than a preferred method of initiating hostilities.

[ ] evidence seems to fit better with the hypothesis that the West struck before the Soviets could reinforce than with the conclusion that the East chose to delay reinforcement. Moreover, INR's impression that the Soviets would reinforce, if they had the choice, was strengthened by the operation into Czechoslovakia in 1968, when the Soviets showed themselves much more conservative without marshal-

ing their forces than most Western experts thought they needed to be. [

] 141. It is clear that while the Soviets might choose to reinforce from the Soviet Union before conflict, they are prepared, if necessary, to initiate an offensive without prior large-scale reinforcement. This appreciation of Pact offensive concepts has important warning implications for NATO, as we no longer can be confident that the movement of a 25-30 division force from the USSR into Central Europe would take place before an attack. In addition, we know that Soviet doctrine emphasizes the importance of using concealment and deception measures to achieve tactical surprise. Before launching a coordinated, large-scale offensive, however, the Pact forces would require considerable preparation for attack. Beyond the preparation of the attack force, some preparation of other forces and of the Pact nations for war would almost certainly be made, and these together with political tension (which the Soviets assume) would provide at least some warning and possibly a long-term warning of the increasing likelihood of hostilities.

#### *Conventional War Operations*

142. Soviet doctrine indicates that Moscow's objective in the early conventional phases of a NATO war would be the destruction of enemy ground, air, and naval forces, with special emphasis on NATO's nuclear weapon and delivery systems and major command and control systems. This would be done to disrupt or weaken the nuclear counterstrike that would be expected and to assure that the nuclear phase would occur under conditions more favorable to the USSR.

143. The Soviets would expect Central Europe to be the decisive theater of a large-scale NATO-Warsaw Pact conflict. Whether they would launch offensives all along NATO's flanks concurrently with any campaign in Central Europe is uncertain. We believe that the Warsaw Pact has the means to conduct limited, but not general, offensive operations in Scandinavia and southern Europe while simultaneously carrying out an offensive against the NATO center. We judge that early Pact offensives toward the Turkish Straits and northern Norway are more likely than in the other flank areas. Recent evidence does

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not reveal Soviet intentions toward the carrying of a Pact offensive into France. The Soviets might prefer not to involve the French in the conflict because the independent French nuclear capability would increase the risk of nuclear escalation.

#### *The Main Theater of Operations*

144. The Soviet military evidently believes that Pact ground forces are superior to NATO's. They also believe that Pact theater forces now in Central Europe are not only capable of containing a NATO attack in the early days of a conflict, but are also capable of conducting a non-nuclear offensive into West Germany.<sup>5</sup> Their primary objectives in central and western Europe would be to destroy NATO forces in West Germany and the Benelux countries, and using airborne and amphibious forces against key Danish islands in conjunction with ground attacks through Jutland, to assist the Pact navies in gaining control of the Baltic Sea and assuring passage from the Baltic to the North Sea.

145. The Soviets probably consider that NATO's tactical air forces could blunt or perhaps even halt this Pact ground offensive. Because of this, the Pact evidently plans a massive, theater-wide air offensive during the initial, non-nuclear phase of a war, aimed at destroying NATO's tactical air forces and other nuclear systems and facilities. This attack would be conducted by tactical aircraft, and by bombers of Soviet Long Range Aviation and possibly Naval Aviation. It would be supported by extensive electronic warfare operations. Given the deficiencies in the capabilities of most Pact aircraft and in pilot training and the prospect of heavy losses, the all-out nature of this scheme would make it a highly risky operation. Its success would depend heavily on surprise to ensure that NATO's air defenses were not fully prepared and mobile nuclear systems not dispersed.

#### *Naval Operations*

146. Naval operations are seen as closely related to war developments on the Eurasian landmass as well as to requirements for a strategic strike against the US and for the blunting of such a strike against the USSR. Soviet naval strategy in a NATO war would be

sensitive to the circumstances under which the war began. Whether or not the Soviets achieve their preferred scenario—in which their forces coordinate the initial attack on NATO forces—they would seek to establish sea control within an area which would include not only the Black and Baltic Seas but also the Barents, Norwegian, and eastern Mediterranean Seas as well.

147. The Soviets probably would seek to attack Western aircraft carriers and ballistic missile submarines anywhere within range of their forces. The initial attacks probably would be timed to coincide with the planned strikes against land targets by tactical aircraft and LRA. NATO ASW forces also would be targeted in the early stages of conflict to permit Soviet submarines to deploy to their forward operating areas more effectively. Naval operations would include extensive use of offensive and defensive mining.

148. Soviet naval operations are likely to be more successful against surface targets than against submarines. Soviet capabilities for combating Western carrier forces—to them a first priority task—include extensive reconnaissance assets and a combination of air, submarine, and surface forces armed with antiship missile systems. Coordinated strikes against carrier forces probably would be at least partially successful—depending on the size, composition, and location of the Western forces, whether the Soviets used conventional or nuclear weapons, and whether surprise were achieved. Soviet ASW forces, on the other hand, almost certainly would be ineffective in preventing submarine operations within the Norwegian, Barents, and Mediterranean Seas, and would have difficulty even in defending themselves against Western attack submarines. Similarly, the Soviet naval air defense systems probably would not be adequate in the face of NATO air strikes.

#### *Other Operations*

149. The Soviets also could conduct combined land, air, and naval operations against objectives on NATO flanks. Their amphibious capabilities, and those of their allies, are primarily tailored for such operations. They probably would seek to seize or neutralize NATO installations in Norway during the early phase of a conflict and to mount operations against Greece and Turkey to secure the Turkish Straits. In both of these cases the primary objective would be to support the forward deployments of Soviet naval forces. In

<sup>5</sup> See paragraph 12 for the views of the Director of the Bureau of Intelligence and Research, Department of State.

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addition, operations against northern Italy, intended to secure the southern flank of Pact forces attacking West Germany, might be launched from Hungary through Yugoslavia or Austria.

#### *Chemical Warfare Option*

150. Soviet military doctrine places chemical warfare in the category of "weapons of mass destruction" along with nuclear and biological weapons. The Soviets control chemical weapons in the Pact countries, and the first use of chemical weapons would require Moscow's approval. There is a possibility, however, that chemical weapons might be used independently by the Soviets before nuclear weapons were employed.

- On the whole, Pact forces are much better equipped and trained than NATO forces to operate in a CBR environment. [

] there is good evidence that chemical munitions are deployed with Soviet forces in Eastern Europe.

- Thus, the Pact forces might gain a considerable tactical advantage by the use of chemical weapons in a non-nuclear conflict. However, the Soviets would have to weigh that advantage against the risk of a NATO nuclear response.

#### *Nuclear Escalation*

151. There are uncertainties in our appreciation of current Soviet nuclear doctrine and we lack information by which to judge the circumstances in which Soviet political authorities would decide to use nuclear weapons against NATO forces in Europe. We cannot confidently predict how the Warsaw Pact would react to a NATO initiation of nuclear war, but we judge that the odds still favor rapid escalation once nuclear war began in Europe.

- If NATO's initial use of theater nuclear weapons were selective and limited, we could not confidently predict the Soviets' response. But they have been broadening the range of options available to them for responding. They might continue purely non-nuclear operations, or they might launch a massive theater nuclear strike—

[ It is possible that they would

respond with limited nuclear strikes of their own—they have considered this alternative.

- The Soviets believe, however, that once nuclear weapons are introduced by either side the risk of escalation is very great, because the side that makes the first massive strike would have the advantage. Thus, the likelihood of an attempted preemption with massive, theater-wide strikes would increase greatly.

- Soviet doctrine does not appear to support the notion of nuclear war at sea during conventional hostilities in Europe. Soviet naval forces have the capability to engage in such a conflict, but there is no evidence [

] of Soviet plans for limited nuclear war at sea. Once tactical nuclear weapons had been introduced, however, Soviet naval forces probably would use them widely in attacks with antiship missiles and ASW weapons.

152. Widespread nuclear operations at the theater level would create a high potential for escalation to intercontinental warfare. Soviet doctrine does not reflect the same distinction between strategic and tactical missions that is sometimes made in the West, and Soviet strategic planning includes a broader range of forces to cover targets in peripheral areas. This has an impact on evolving Soviet concepts of the nuclear aspects of theater warfare and the linkage between theater war and intercontinental war.

- Available classified Soviet writings are vague with regard to the issue of nuclear escalation from the European theater to a US-USSR intercontinental exchange, but unclassified writings continue to characterize such escalation as likely.

- The quantity of nuclear delivery systems in Eastern Europe has been increasing, and this would enable the Soviets to conduct nuclear warfare in Europe at higher intensities before having to use USSR-based systems. There is, however, no direct evidence that the Soviets are seeking an alternative to using their USSR-based nuclear forces in a large-scale theater war.

- A large-scale theater conflict would directly involve at least some elements of the Soviet strategic forces. Naval operations, for example, probably would result in some action between



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SSBNs and ASW forces, even if both sides tried to avoid it.

### E. General Nuclear War

153. Soviet strategy is based on the premise that nuclear war is possible, and that the USSR should be prepared to fight and win such a war. Soviet doctrine stresses the importance of war-fighting capabilities, and the Soviets view deterrence and war-fighting capabilities as closely coupled. The concept of mutual assured destruction as a desirable and lasting basis for a stable strategic nuclear relationship between superpowers has never been doctrinally accepted in the USSR. Soviet political and military leaders probably view the concept of mutual assured destruction as an operative reality at the present, but the basic premise of Soviet strategic doctrine seems to be that it is possible to fight a nuclear war, defeat one's enemies, and emerge from the conflict without suffering irreparable damage.

154. The Soviets apparently believe that a general nuclear war probably would be relatively brief, with the outcome decided by massive nuclear strikes. While their classified writings acknowledge the current dominance of offensive over defensive technology, they recognize that this situation could be altered. Despite an emphasis on the decisiveness of massive nuclear strikes, they also stress the importance of active and passive defenses, and Soviet doctrine does not exclude the possibility of a protracted nuclear war.

#### *Readiness*

155. While allowing for the possibility of surprise attacks on the USSR, Soviet doctrine implicitly rejects the idea that war is likely to begin without warning to them. On the contrary, Soviet doctrine specifically postulates a threatening period during which rising political tensions would trigger increased readiness in the opposing forces. This belief is reflected in a readiness posture that is markedly different from that of US strategic forces in some respects. Most elements of the Soviet strategic forces normally maintain a relatively low state of alert, but are organized and trained to achieve a high state of alert within a few hours. Thus, for example, the SSBN force normally has only a small portion of its units at sea, but a substantial portion of the units in port are required to be ready to put to sea on short notice.

#### *Concealment and Deception*

156. Soviet doctrine accords considerable importance to the use of concealment and deception measures to achieve strategic objectives. For many years the Soviets have been engaged in various forms of concealment and deception activities, including disinformation, relating to their military forces. We believe that they would make a deliberate and widespread effort to mask the status of their forces during the period preceding a nuclear war, in an attempt to increase the survivability of their forces and to degrade US capabilities to obtain strategic warning.

#### *Offensive Operations*

157. The Soviets believe that preemption is the most advantageous option if they conclude that nuclear war is inevitable. If they were to preempt following a period of extremely high tensions in which they had maximized their readiness, they would probably launch a full-scale preemptive attack using the bulk of their strategic arsenal. They would probably hold back a portion of the force, however, for use against high priority targets not destroyed in the initial attack, for post-attack bargaining, and to deter attacks by third countries.

158. The Soviets probably are confident that they can monitor changes in the readiness of enemy forces with considerable accuracy and promptness. We are uncertain, however, whether they expect to obtain unambiguous warning of an enemy's intention to launch strategic weapons. In addition, in view of the risks involved in initiating hostilities, the political leaders who have the final authority might not be easily convinced that the time to preempt had come. In a situation of mounting tension, however, we would expect at least the ICBM force to be at an increased level of readiness, permitting the USSR to launch a retaliatory strike with large numbers of weapons with minimal warning.

159. A review of the evidence concerning Soviet missile targeting indicates a consistent emphasis on countermilitary missions which encompass not only enemy military forces but also elements supporting the overall military effort—including some strategic industries. The first wave of a preemptive strike need not cover all of these target categories, as the primary objective would be the destruction of those weapons

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which could otherwise retaliate. An initial attack on enemy strategic forces, for example, might rely mainly on silo-based ICBMs and SSBNs deployed within range of their targets (including D-class submarines in or near home port). Subsequent attacks probably would be directed against less time-urgent targets.

160. The Soviets are evidently considering the implications of US weapons-employment policy calling for limited uses of strategic forces. In the few theoretical discussions in available Soviet sources, however, there is scant suggestion that limited strategic nuclear operations at the intercontinental level are being planned. In their writings and statements, the Soviets have generally rejected the possibility that either the US or the USSR would be able to exercise restraint once nuclear weapons had been employed against its homeland. There is evidence, however, that the Soviets could be incorporating limited nuclear employment concepts into their military doctrine for a theater war.

#### *Active Defenses*

161. Measures to increase the readiness of the strategic defensive forces would begin during the prewar period of tension, and all elements of the strategic defenses almost certainly would be at a high level of alert. If warfare at the intercontinental level were preceded by conventional or theater-level nuclear conflict, some strategic defensive forces would already have begun active operations. Naval ASW forces probably would be deployed to their forward operating areas, for example, while many interceptor units and some SAM batteries probably would have moved to reserve airfields and alternate firing sites.

162. Even with Soviet forces fully alerted, however, the status of strategic defensive capabilities probably

would cause considerable concern from the Soviet point of view. We estimate that the Moscow ABM system would provide little protection against a massive attack, that Soviet ASW forces would be unable to inflict significant attrition on Western SSBN forces, and that Soviet air defenses could not adequately cope with low-altitude penetrations by bombers. Thus, even after allowing for preemptive counterforce strikes by the Soviet strategic attack forces, we believe that the defensive forces could not prevent massive damage to the USSR, and that the Soviets would share this belief.

#### *Passive Defenses*

163. Soviet doctrine calls for passive defense preparations to be accelerated during a period of tension, and such preparations almost certainly would be stepped up in the event of theater-level hostilities. Full implementation of Soviet civil defense plans, however, would complicate attempts to achieve strategic surprise. Thus, the Soviet leadership could face a difficult choice between all-out civil defense efforts and attempts to achieve surprise through concealment and deception.

164. Soviet passive defense efforts—civil defense programs and the hardening of important military facilities—would provide some protection against nuclear strikes, but we do not believe that this would prevent massive damage to the USSR. The Soviets would probably expect their civil defense to be able to preserve a political and economic cadre and to contribute to the survivability of the USSR as a national entity. Soviet civil defense planning seems to be based on the assumption that effective defenses are feasible, but we are uncertain as to the USSR's actual civil defense goals and expectations.

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